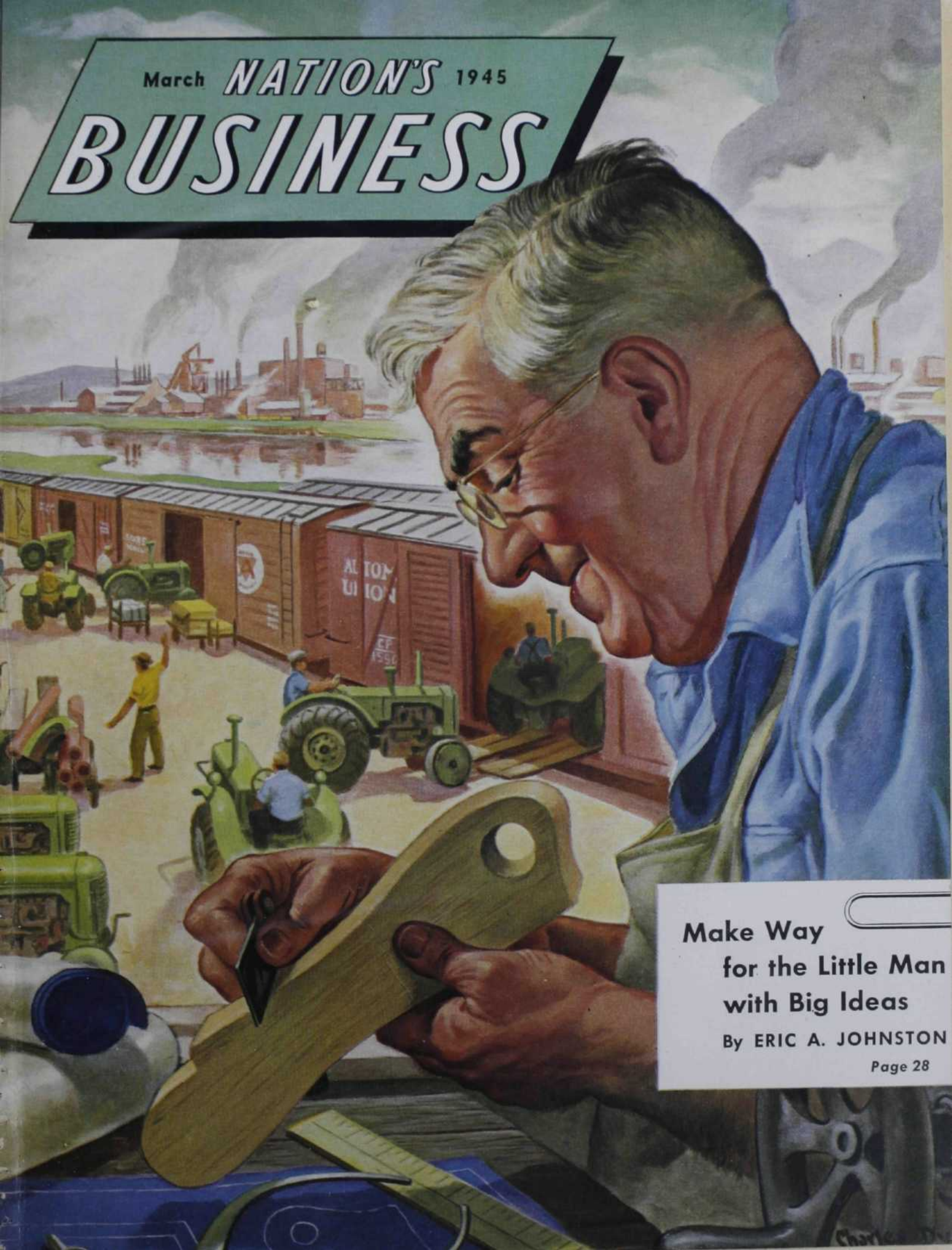


March *NATION'S* 1945

BUSINESS



**Make Way
for the Little Man
with Big Ideas**

By ERIC A. JOHNSTON

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FACTS FOR FUTURE-MINDED AMERICANS



ABOUT THE MIGHTY MARTIN MARS

At some far-flung naval base, special equipment is needed . . . quickly. Big events are in the making; and the war can't wait while plodding freighters cross sub-infested seas. This is a job for the 72-ton Martin Mars, world's largest flying boat. Our Navy's answer to the cry of "more supplies . . . faster," the Martin Mars can carry 20 tons of cargo to the *farthest spot on earth* in 3 days or less. Now in regular service with the Navy, the Mars is the most efficient airplane yet built . . . per pound of material used, per horsepower and per gallon of fuel. Twenty more of these giant ships, each 82 tons, are now being built for the U. S. Navy.

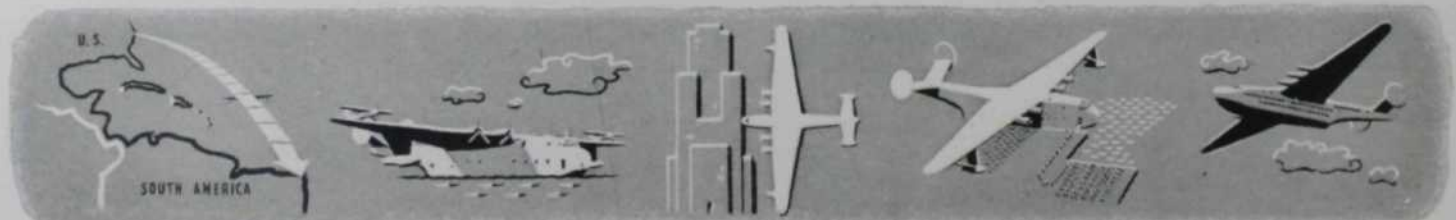
Into the Mars went hard-won Martin knowledge gleaned from construction of the original trans-Pacific Clippers . . . the giant Russian Clipper . . . and the

Navy's long-range patrol bombers. From the Mars have come further important findings which will lend added speed, safety and comfort to tomorrow's greater Martin airliners. The Martin Mars is doing more than help win a war . . . she's blazing the trail to a new and brighter tomorrow!

THE GLENN L. MARTIN COMPANY, BALTIMORE 3, MD.
GLENN L. MARTIN-NEBRASKA COMPANY—OMAHA

Martin
AIRCRAFT

Builders of Dependable  Aircraft Since 1909



4227 Miles, Non-Stop from Maryland to Natal, Brazil, were flown by the Mars. She carried 16 persons, 13,000 lbs. of mail, broke many records. The Mars is powered by four 2200 h.p. engines.

From an Actual Photo of the Mars showing a standard sport plane on each wing, this gives some idea of her size. Mars' wings are so thick that crew can enter them to service engines while in flight.

If Stood on One Wing, the other wingtip would tower 200 feet into the air . . . higher than a 20-story building. The Mars contains 1½ million rivets, 7½ miles of wiring, 1.9 miles of piping, 18 telephones.

150 Soldiers, fully armed, could be easily transported by the Martin Mars. Her cubic content equals that of a 14 to 16 room mansion. When fully loaded, before flight, the Mars draws 5 feet of water.

Already Designed, 150 to 250 ton Martin airliners will someday succeed even the Mars. Martin engineers declare there is no practical aerodynamic limit to the size of overocean aircraft.

In war or peace
B.F. Goodrich
FIRST IN RUBBER



The tire that walks on its ankles

A typical example of B. F. Goodrich development in rubber

WHEN farmers began to put their tractors on rubber tires instead of using steel wheels they found the savings so great that they wanted tires for their combines, cornpickers, binders, plows, and many other implements.

Tires for each piece of equipment involved special problems. Take the tires used on plows, for example. Ordinary implement tires were tried on the rear, or tail wheel. Because the wheel rolls at an angle and the tire rubs the furrow wall, these tires wore out in a hurry. Not on the tread, but on the sides.

Then B. F. Goodrich engineers

tackled the problem, came up with probably the most unusual tire ever built. It's shaped something like an angel food cake. Instead of building the tread in the usual position it is placed to one side so that it rides flat on the ground. Then they protected the tire against furrow wall wear by a thick, projecting rubber flange.

This tire wears longer, provides uniform plowing depth. It guides the plow, keeps it running straight, gives greater cushion against shocks and permits moving the plow easily from job to job.

The plow tail wheel tire, an exclusive B. F. Goodrich product, is one

example of the many developments made in farm tires to speed work and save money. It is typical of the B. F. Goodrich research which is constantly improving tires for automobiles, trucks, airplanes, and industrial equipment. Right now there is a shortage of all tires—particularly truck tires. Your B. F. Goodrich dealer has limited supplies of tires backed by the B. F. Goodrich policy of constant improvement. See him before you buy. The B. F. Goodrich Company, Akron, Ohio.

B.F. Goodrich
Truck & Bus Tires

Motor Transport Pays Its Way... and More!



TAXES—collected from highway users—built America's roads and are maintaining them.

The government does not subsidize motor transport or the private automobile owner. They both pay their way—and more.

These are the definite conclusions of one of the most comprehensive and thorough government studies ever undertaken!

Under the title "Public Aids to Transportation", the late Honorable Joseph B. Eastman, Chairman of the Interstate Commerce Commission and previously Federal Coordinator of Transportation, published a conclusive government report which definitely settled the subsidy question.

This monumental work was the result of seven years of careful investigation and research to determine how much, if any, government money is being received by the various forms of transportation.

The work was carried on under the personal direction of Mr. Eastman and Dr. Charles S. Morgan, former Interstate Commerce Commission Economist.

While so voluminous and technical as to prevent thorough reading by the average citizen, the business press of the country was quick to hail its masterful thoroughness and significance. Typical press excerpts are:

"... report has shattered irrevocably the contention of the railroads that their highway competitors are 'subsidized' by the Government."—*Detroit News*.

"... ideal man for this job was quiet, learned, earnest, long-laboring Coordinator (now ICC Chairman) Joseph B. Eastman, whose honesty is honored by railroad men, railroad-baiters and ship-pers alike."—*Time Magazine*.

"... certain types of heavy motor vehicles used in competition with other forms of transportation have paid substantially more than their fair share of highway costs."—*Wall Street Journal*.

America's highways, like all roads from the beginning of history, were

built primarily for commerce. No other purpose could sustain the cost of building and maintaining these highways. But there have been those who have stated that motor transport competed unfairly with other types of transportation because it did not pay for the cost of highways upon which it operated.

This accusation was exploded once and for all by Eastman who said, "... there has been no public aid to motor-vehicle users as a class since 1926" ... He reported that overpayments of motor vehicle users—consisting of State gasoline taxes and registration fees, miscellaneous State taxes and estimated municipal and county and local motor-vehicle taxes—beginning in 1927, reached the huge total of \$385,360,000 in ten years. The overpayments range from \$5 annually for farm trucks up to \$287 for truck-trailers of over 5 tons capacity.

Well over 90% of the inter-city motor freight handled by for-hire carriers travels in these truck-trailer combinations of more than 5-tons capacity.

Besides the indispensable service Motor Transport has rendered the American public and American business, these over-payments have lightened the burden for other highway users, particularly the private motorist.

Furthermore, the payments per vehicle mentioned by Eastman do not include the so-called "legal diversion" deducted from highway user revenues. Neither are Federal excise and other general taxes included.

Motor Transport pays its way—and more! Eastman proved this scientifically and conclusively. Nobody has been able to refute him.



EASTMAN REPORT HIGHLIGHTS

Highways users pay more than their fair share of road and street costs. Over-payments beginning in 1921 had reached the huge total of \$385,360,000 by 1937. Highway transportation is handicapped by costly restrictions (YOU, the public, pay for this).

In one comparable year:

OVERPAID
Highway transportation ..\$110,722,000

SUBSIDIZED
Railroads\$ 35,635,000
Waterways 128,528,000
Airways 21,010,000

- Highway transportation saves consumers "tens of millions annually."
- The size and capacity of vehicles has but little influence on highway costs.
- Theory that highways are constructed for government "profit" is exploded.
- In the typical year of 1932, "for-hire" trucks above 1½ tons capacity over-paid their share of highway costs by \$4,500,000.



World's Largest Builders of Truck-Trailers

Service in Principal Cities

FRUEHAUF TRAILER COMPANY • DETROIT 32



Americans Build World's Longest Pipeline

Running all the way from Calcutta up into North Burma, the world's longest pipeline is now delivering millions of gallons of gasoline for airplanes and motor vehicles at American installations in the North Burma-Assam combat area.

The line, which is longer than even the Big Inch in the United States, will eventually link India and the central Yunnan airfields in China. The construction has been under the direction of American army engineers.



THE BEST



THE BEST GASOLINE



THE BEST GASOLINE IS STILL FIGHTING

By ship, by train, by truck and by pipeline millions of gallons of America's finest gasoline are going to our fighting men.

This fighting gasoline is superior to anything ever sold to car owners. From both quantity and quality standpoints, it represents the best of the American petroleum industry's production, plus the lion's share of the Ethyl fluid being manufactured.

The best gasoline is still fighting—will continue to fight until the Army and Navy say it's safe to cut back on military production. Then you will get all the Ethyl you want and better Ethyl than ever before.

ETHYL IS A
TRADE MARK NAME

Ethyl
Corporation



CHRYSLER BUILDING,
NEW YORK 17, N. Y.



BUY MORE
WAR BONDS

**Like Barnacles
On A Ship
EXCESSIVE
COSTS
Are A Drag
On Your
Business**

You've got to
spend money
to make
money!

GEORGE S. MAY COMPANY

The World's Finest Business Engineering

— OFFICES IN PRINCIPAL CITIES —



PUBLISHED BY

CHAMBER OF COMMERCE OF THE UNITED STATES

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Diagnosis for Dust

There is no such thing as "ordinary" dust—its microscopic characteristics are as complex and varied as the materials of which it is composed. It can be toxic, explosive, corrosive, abrasive or otherwise harmful to health, property or equipment. Some dusts are a hazard and utterly worthless—others have intrinsic value and therefore should be collected for other than nuisance reasons. AAF engineers know them all thru 25 years of dealing with every variety. Their experience in diagnosing dust problems and prescribing equipment, in close cooperation with your consulting engineers, is at your disposal without obligation. If we can be of service now in perfecting your post-war dust control plans, write us.

Write For This FREE Book



If you have a dust problem, write us for a copy of "AAF In Industry" which describes our complete line of air filtration and dust control equipment for industry.

AMERICAN AIR FILTER CO., INC.
 INCORPORATED

109 Central Avenue, Louisville 8, Ky.
 In Canada: Darling Bros., Ltd., Montreal, P. Q.



5 ENGINEERED DUST CONTROL



Launched!

for the Navy, Army, Merchant Marine and war industry is now producing five and a half billion cooling units* every hour . . . hour after hour!

But huge as it is, this cooling capacity is not enough for Victory. The armed forces are calling for more and more equipment. Essential industry and home front needs are taxing the balance of our production facilities to the utmost. At York, we must continue to plan and produce better engineered air conditioning and refrigeration equipment—steadfastly working under our creed—"If it won't help win the war forget it!" Only after Victory . . . only then will the York organization translate the advancements of the war years into tomorrow's improved refrigeration and air conditioning. York Corporation, York, Pa.

* Cooling effect in B.T.U. per hour, American Society of Refrigerating Engineers
Testing and Rating Code Number 14-41.



YORK REFRIGERATION AND AIR CONDITIONING

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

IRON FIREMAN STOKER

burns less coal
— USES LESS
LABOR



Wausau
Laundry Co.
Saves 94 Tons
of Coal and
450 Man Hours
a Year



Wausau Laundry Company, Wausau, Wisconsin

AN Iron Fireman stoker in the Wausau Laundry Co., Wausau, Wisconsin, saved 18% of previous fuel costs and during one year saved over 10 weeks full time labor of one man.

Thousands of plants throughout America are experiencing similar savings in fuel and man hours. These savings result because Iron Fireman stokers are under full automatic control—instantly responsive to every demand. They require less fuel because they burn coal with scientific efficiency. There's an Iron Fireman stoker for every size and type of firing job.

You can find out *now* just how much fuel and labor Iron Fireman can save in *your* plant. Iron Fireman has a thoroughly experienced engineering staff that you can call in, without cost or obligation, to make an impartial survey of your boiler room. Write Iron Fireman Manufacturing Co., 3771 W. 106th St., Cleveland 11, Ohio. Other plants in Portland, Oregon; Toronto, Canada.

IRON FIREMAN

Automatic Coal Stokers



IRON FIREMAN COAL FLOW STOKER saves labor by feeding direct from main coal bunker. No manual coal handling. Automatic fuel and air controls maintain efficient combustion, regardless of load fluctuation.

NB

Notebook



Idea of March

THE Idea of March approach and the customary groan of taxpayers subsides this year to a whisper. Fifteen on the calendar passes along for millions like any other day, thanks to pay-as-you-go and Beardsley Ruml, chairman of the Federal Reserve Bank of New York, treasurer of R. H. Macy & Co. and ex-Professor of Education at the University of Chicago.

Proving he is no one-idea man, Mr. Ruml months ago launched his second plan. He would chop off corporation income taxes which take a slice of company profits and then another slice of the same profits from stockholders. He sums up the case neatly in his book "Tomorrow's Business," recently published by Farrar & Rinehart, Inc.

Mr. Ruml contends that, besides being double taxation, the corporation income tax frequently leads management to do for tax reasons what it would never do in sound practice. His top argument, however, is that this tax money must come from consumers in higher prices, from employees in lower wages or from stockholders in lower returns.

"Tomorrow's Business" is not just about taxes. Mr. Ruml has some thought-provoking ideas on trustee-directors, labor, tariff, fiscal policy and other front-line topics. Incidentally, his publisher's party for book review and literary editors was not given at the Bankers' Club but at the Stork Club.

Human nature

THIS seems as good a time as any to call the attention of the heavy thinkers, who are concocting schemes for a post-war planned economy, to something they have consistently overlooked. That is the human element.

Public works, pump priming, credit control—designed to take up the slack when business is lagging—all serve notice when they are turned on that business danger lies ahead.

When the careful motorist sees the roadside warning, he slows down. Business does about the same thing.

As a result, unless business men have the most convincing demonstrations that the control devices actually work, they

instinctively ease off the accelerator and feel for the brake. Then the pump priming must take up, not only the original slack, but the extra slack inspired by its own operation.

Perhaps what the economic planners need is a "secret weapon" that can be operated unnoticed. Maybe some "pilot" plant trials on a small scale should be used in experimentation.

Removing a human instinct is no small undertaking.

From buying to selling

FEW retailers are letting wartime luxury soften their postwar thinking. Most are well aware that peacetime competition will bring tough problems even though consumer buying may boom along for several years on hard goods if not on the soft lines.

A basic proposal in merchandising soft goods, therefore, is being dusted off again:

It contemplates subordinating the buying to the selling function. In short, a sales manager and not a buyer would head up a merchandise department or the buyer would switch around his role.

In a recent address, H. I. Kleinhaus, formerly manager of the Controllers' Congress of the National Retail Dry Goods Association, said:

"There is a gigantic task ahead. Retailing must reconverge itself from the job of filling orders to that of making orders. The problem will be not to find merchandise but to move merchandise and stimulate consumer demand."

Instead of the usual four coordinated functions of merchandising, publicity, control and service, Mr. Kleinhaus suggested the line and staff plan of a military organization. All functions related to selling would be concentrated under execution of the line. All planning and service functions would become staff operations.

Under such a pattern, he pointed out, the buying activity is subordinate to selling.

"Thus there will be developed an approach to buying based on such inquiries as, 'How can this be sold?' and, 'How can the demand for that be stimulated?'"

Well bought is half sold, according to



What costs less today than 20 years ago?

IN spite of higher wages, increased taxes, and greater costs for all the 1001 materials that go to make a railroad, freight costs to the public are actually lower today than they were 20 years ago. So low, that in 1944 a *ton of freight* was carried at an average cost of *less than one cent* a mile.

How possible? Simply by constant improvement in

operating methods, continued research and development of new equipment, and the earnest cooperation of all railroad men and women.

Better and better transportation is the continuing aim of the Erie and other Railroads. For, low cost, mass transportation is an essential link in bringing the good things of American life into every home.

Buy War Bonds and Stamps



the ancient trade dictum, but for postwar that other half is the job merchants are intent upon carrying out.

Machines that think

FROM the butterfly governor of steam engine days to the marvels which electronics already perform, spectacular progress is marked in machine control. It is a progress frequently overlooked, but something that will play an important part in postwar progress. As production speeds accelerate, the need for accurate controls increases.

To be faster, the flow must be smoother.

In the past, most industrial exhibits have featured displays and demonstrations of control instruments, but, the magic dials are soon to have a center-stage chance to show what they can do. From Sept. 17 to 21, an Instrument Exhibition will be held in Pittsburgh.

Booth space is already reported about sold out.

Meanwhile ways of improving inspection technique are commanding increased attention in industry. Exacting specifications for war material have brought a new approach. The new technique is not to sort out the defects after they have occurred, but to prevent them from occurring.

Safety FIRST

AN ounce of prevention is worth a pound of safety posters according to the Beloit Iron Works of Beloit, Wis., where the emphasis in "safety first" is upon "first."

Here are the results of a 15-year program as summed up by M. Walter Dundore, production manager: Lost time, down 80 per cent; compensation and medical costs, down 80 per cent a month; accident frequency rate, down 60 per cent; credit gained on insurance premiums, 35 per cent.

In peacetime Beloit makes paper machinery. The safety program was started when designs swung from relatively small, low-speed machines to the goliaths of the industry today. Moreover, the safety gains were achieved while production and employment were being doubled and total "exposure hours" increased 50 per cent.

"The problem was attacked," Mr. Dundore explains, "from the point of view that to facilitate the flow of work the production manager should conserve human endeavor as well as produce economically."

"The production manager can prevent accidents by at least partially eliminating their causes. We have found that such forethought doubles production and prolongs human productivity, even in such times as these when it has been necessary to convert on four different occasions to manufacturing war material entirely different from our peacetime product."

Here are some of his suggestions: Reducing working temperatures is better than sweat bands or salt tablets;

Fins removed from castings are better protection than leather gloves;

Built-in protection against contact with molten metal is more effective than the treatment for burns;

Replacing stair treads is better than treating sprains;

Painting weights on castings is better than having to use litters;

Sanitation is cheaper than clearing up infections.

Properly grounded electric equipment lends a sense of security just as painted aisles encourage good housekeeping.

Mail order bait

IT is possible to conjure up lots of possibilities out of the formation of Sears Western Hemisphere Corporation, recently capitalized at \$2,000,000 to operate principally in South America. The mail order house, for one thing, is likely to be the trail blazer for a host of other enterprises which have operated casually or not at all in the Latin republics.

The new company is authorized to conduct a general export and import business either as principal factor, agent or commission merchant. A store to cost \$2,000,000 in Mexico City has been announced. Trade bastions elsewhere are planned.

Latin dollar balances, as a result of the war, ought to get new business off to a flying start, authorities say. The long-term outlook will depend, they add, upon what has been done meanwhile to promote trade and industry within the various countries.

New, little industry

FIFTH anniversary for a plant tucked away on the Davidson River which brings chemically pure water out of Pisgah National Forest in North Carolina roused no great national interest.

It should have because most of the cigarette paper used by popular brands now comes from there.

Pure water is necessary because cigarette paper involves a number of ticklish, technical requirements. It must be tasteless even when burning, pure white and opaque, thin as a hair yet elastic and strong and moisture resistant. It must burn at the same rate as tobacco and not stick to the lips.

The new industry has brought 1,500 jobs to the mountain community. Native flax is now used for paper which Harry H. Straus, president of the concern, says is superior to that made in France where as recently as 1939 we got 90 per cent of our supply—and he helped develop the French industry.

Television riddle

SEVERAL years ago at the first big press demonstration of television, David Sarnoff of RCA tactfully explained that general use of the new invention might have to wait upon ways of obtaining appropriate revenue. Recently J. J. Nance, vice president of Zenith, said

Here's Cash for You to carry through ANY MOVE THAT'S GOOD BUSINESS

Whether you need thousands or millions, Commercial Credit is ready to help you buy a business, buy out partners, remodel or expand your plant, or finance any other sound business venture . . . Telephone, write or wire the nearest office listed below.

TAXES CATCH YOUR BUSINESS SHORT OF CASH?

If you need more cash than you can get from present sources, get in touch with Commercial Credit—a quick source of funds that is not restricted by outmoded thinking, rules and customs. Unlike old-line institutions, we're more interested in your profit potentials than in your current posi-

tion. What's more we will not interfere with your management or limit your operations in any way. You can use Commercial Credit money for as long as you need it . . . with no due dates to meet and no demand obligations hanging over your head. For fast action, write, wire or phone.

Commercial Financing Divisions: Baltimore, New York, Chicago, Los Angeles, San Francisco, Portland, Ore.

COMMERCIAL CREDIT COMPANY

Capital and Surplus More than \$65,000,000

BALTIMORE 2, MD.



The **NATION'S** Goods pass through a Railway Expressman's hands!

The Railway Expressman is an integral part of the commercial and social life of the nation. That's one reason why, prior to the war, over 65% of all employees had been in the Express Service from 10 to 50 years. Few sought other work. The compensation, interest of the work — in short, being a Railway Expressman — offered a way of life satisfying to most.

Today, over 22,000 highly trained Expressmen are serving in the armed forces. The enormous increase in shipments, mostly of war goods, requires over 75,000 men and women, an increase of 50%. These new Express employees are performing their work well under trying conditions.

We look forward to the end of this war and the return of our veterans. We shall welcome them back. Old and new Expressmen will be ready to meet the shipping needs of an ever-expanding America.



NATION-WIDE

RAIL-AIR SERVICE

about the same thing. Zenith has been operating a television station for almost six years.

The "economic riddle," as he described it, involves meeting the heavy expense of providing acceptable programs.

"Advertisers can't profitably sponsor good television production," he said, "until there is a mass audience. We can't get a mass audience until we have provided the American people with assured continuous entertainment, pleasing enough to stimulate the buying of receivers by the million."

Other representatives of the industry have other ideas. They maintain that television is much further along technically than radio was just before its remarkable advance.

Meanwhile advertising quarters pose the question of how the busy housekeeper can sit all day before the television screen to see products demonstrated. Radio follows her to the kitchen and round about in her duties. Will we have "walkie-lookies?"

Jobs for service men

THE returning service man need have little worry about the attitude of his former employer—he wants to give him his old job back, or one just as good if not better, according to a survey made by the Department of Manufacture of the National Chamber.

Says the Department in a booklet just published, "Employment of Veterans": "The veteran seeking reinstatement can count on more liberal treatment by his company than is required by the Selective Service Act."

Purpose of the booklet is to summarize the responsibilities and policies of business and industry in assimilating veterans into the civilian economy. You may receive a copy without charge by writing to Department of Manufacture, U. S. Chamber of Commerce, Washington 6, D. C.

Expanding the record

IN THIS department in January we mentioned that the Gamble Stores, Inc., and its affiliates, Gamble-Skogmo, Inc., and Western Auto Supply Company were planning to enter the export field. We could have been more explicit. Actually we referred to the Western Auto Supply Company "of California."

The Western Auto Supply Company, a Missouri corporation, has no connection with Gamble stores and is not involved in the new plan.

Pattern Maker

DESIGNERS dream the dreams and the machines turn them into reality. But in between is the man who appears on this month's cover, an artist with a passion for precision, a skilled handcraftsman who makes it possible for the production line to surpass hand operation.

Helping the sick get well



LAMPS that kill germs . . . X rays to guide the surgeon's fingers . . . operating rooms bathed in glareless light . . . air conditioning to screen out street noises and dust.

Helping the sick get well is only one of the contributions of General Electric. From the research and engineering in G.E.'s laboratories come products to make your work easier, your home brighter, creating new comforts, better jobs.

The pictures you see here are typical of things accomplished for you by G-E research and engineering. *General Electric Company, Schenectady, N. Y.*



Mirror of D-Day injury! How X rays speed treatment of war injuries is shown in this picture of Seaman Brazinski's thigh. On D-Day a German mine shattered his boat, blew him 20 feet in air. Rescued by an LST, rushed to England, X rays quickly defined his injury, permitted accurate setting. Portable G-E

X-ray machines at St. Albans Naval Hospital, L. I., regularly check his progress. Through the skill of doctors 97 per cent of the wounded in this war are saved. The modern form of X-ray tube was invented by Dr. W. D. Coolidge, G-E scientist. X-ray units built by the G.E. X-Ray Corp. are at battlefronts the world over.

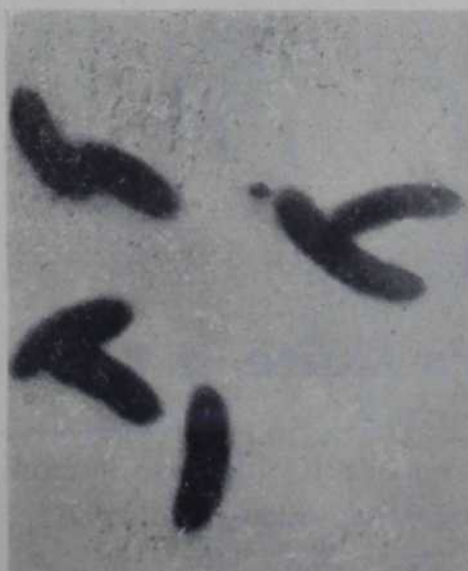


New lamp kills germs . . . Germ-laden air is purified by the new G-E germicidal lamp. It is already at work in hospitals, in battlefront operating rooms. Tried in a school classroom during a measles epidemic, only one-fourth as many children contracted measles, as compared with unprotected classrooms.

★

Hear the G-E radio programs: *The G-E All-girl Orchestra*, Sunday 10 p.m. EWT, NBC—*The World Today news*, Monday through Friday 6:45 p.m. EWT, CBS—*The G-E House Party*, Monday through Friday 4:00 p.m. EWT, CBS.

FOR VICTORY—BUY AND HOLD WAR BONDS



Seeing the invisible . . . The electron microscope, more powerful than ordinary microscopes, gives doctors a new tool to fight disease. Here is the germ, *bacillus subtilis*, magnified 8,000 times. G-E engineers are working to make available a portable electron microscope for industry.



Helps treat Infantile Paralysis . . . Doctors wanted hot packs to relieve pain and reduce muscular spasms, but such steam packs tended to burn. G-E workers put together a machine for hospital use that produces heated packs that even at 180°F. will not burn the patient's skin.

GENERAL  ELECTRIC

922-624-211



Sometimes There's Quite a Crowd

Maybe you don't realize it, because so many Long Distance calls go through so promptly.

But sometimes, in some places, there's an extra heavy rush and all available circuits are in use and people are waiting.

Then the operator will make this wartime suggestion—"Please limit your call to 5 minutes."

BELL TELEPHONE SYSTEM



"Showers and cooler"



American kids are like that. Comes hot weather, they'll roll on the lawn under the hose or leap whooping into ponds and pools to keep cool. And engines are just like people, that way. Keep 'em cool, and they'll be more vigorous and energetic. That's why General Motors creates good weather for them to work in, right inside them. Here's the story:

The minute an engine starts, a cooling system must start right with it.

The temperature has to be brought to the point where the engine operates best, and kept there.

That's why General Motors engineers, always working to make more and

better things for more people, studied and tested radiators and cooling systems for so many years.

They devised radiators, oil coolers and air coolers for all kinds of engines. Your own General Motors car benefited enormously from their research — at the same time they were finding out how to liquid-cool a 2000-horsepower airplane motor before it was even built.

Then came a war of machines — engine against engine.

And the cooling systems General Motors men had developed met the test fairly. They helped those LST's and LCI's to swarm up to the beaches

on D-Day. They helped to keep subs cool and livable. They helped to keep airplane engines singing their long song. This very minute, our fighting men, earnest and intent, are bent over the gauges and indicators that tell of tip top weather inside their engines.

Here again, peacetime experience and research helped turn the tide of war. The American way of throwing open the doors of opportunity to men of enterprise once more proved its value.

And in the fertile, productive years ahead it will make, in even greater measure, its contribution to the happiness and prosperity of all.

GENERAL MOTORS

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CADILLAC • BODY BY FISHER • FRIGIDAIRE
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Buy More War Bonds



It's an old

AMERICAN CUSTOM



THIS IS A NATION that believes in equal footing. To a young matron from Middletown and a starlet from Hollywood . . . to the office boy and his boss . . . good looks, good wear and sheer comfort are common denominators of the American shoe.

And if you will but step behind the scenes of our vast shoe industry . . . you'll find still another instance of the work of one of man's oldest servants—*salt*! For centuries now, salt has been used for the preservation of hides and skins before tanning. It is a precious ingredient in tanners' formulas for transforming those hides and skins into finished leathers.

But modern American tanners are not content with ancient ways. They have made a science of the craft of tanning. They now measure the exact amount of salt for their needs with laboratory precision . . . using 100% saturated brine as their measure. They pipe this same brine

throughout the tannery so that it is instantly on tap as required. This saves untold drudgery—eliminates wastage of valuable man-hours.

For these production improvements, they credit "Salt Headquarters"—*International*. This company's Lixate Process for the production of 100% saturated, crystal clear brine from economical Sterling Rock Salt is a major and exclusive contribution to American industry.

The list of industries to which salt is vital is almost endless. And like the tanners . . . the majority of these are served by *International* as "Salt Headquarters". Not only because of the unique salt processes developed exclusively by its engineers . . . but also for the unsurpassed quality of its product . . . *Sterling Salt*.

International Salt Company, Inc., Scranton Pa. and New York, N. Y. Sterling Salt for every use—in industry, agriculture, the home.



Courtesy Theodore Roosevelt House, New York City.

"T. R." Imagineer of destiny!



COLONEL Theodore Roosevelt was one of America's great Imagineers.*

He travelled light. Leading the charge of San Juan Hill his equipment was an army service revolver and a canvas covered aluminum canteen, slung over his shoulder.

Aluminum canteens were a rarity in the Spanish American War. Few were available at any price. Teddy Roosevelt had one. John Jacob Astor had another. None were issued to the rank and file because the price was too high.

Intensive original research, conducted by Alcoa through the years, has brought the price

of aluminum within the reach of all . . . but, more important still, Alcoa's experience in various types of manufacture has been given free to many small manufacturers, enabling them not only to supply millions of mess-kits and canteens to the armed services, but also to win contracts specifying many unusual uses of aluminum for war time purposes.

Recognizing that America prospers only as small business prospers—providing additional jobs and security for millions of workers—Alcoa stands ready to assist any manufacturer, large or small, in the solution of problems involving the use of any aluminum product.

ALUMINUM COMPANY OF AMERICA, 2125 Gulf Bldg., Pittsburgh 19, Pa.

*Imagineer . . . Alcoa's word to represent the union of imagination, man's oldest mental development, and engineering, his newest. Together they are the key to progress.

ALCOA FIRST IN ALUMINUM





Pulling keeps a tire in good shape, too

ANOTHER REASON FOR GOODYEAR LEADERSHIP

TIRES used to "grow" and get "fat." This caused the tread rubber to stretch — and, as a result, the tire wore faster.

Then Goodyear developed a way of pre-stretching the cords making up the plies in a tire. As the tough cotton fibers are tightly twisted, *a positive and continuous pull is exerted upon them.*

The cords are treated in a special solution used exclusively by Goodyear, which locks the fibers securely into position . . . and the result is Goodyear's exclusive low-stretch

Supertwist cord — a cotton cable with great strength and flexibility. It holds the rubber in compacted form . . . maintains the size and shape and improves the wear-resisting qualities of the tire.

It was Goodyear that revolutionized the tire industry with the introduction of the first multiple-ply cord or "string" cord tire way back in 1913. Because of Goodyear leadership in pioneering this type of tire, all tires today wear better, last longer, give far more mileage at much less cost.

The world's leading builder of tires and a pioneer in rubber — natural and synthetic — Goodyear also forges ahead in many other fields — aviation, chemistry, textiles, metals . . . continuously developing new products for you.

BUY WAR BONDS — BUY FOR KEEPS



THE GREATEST NAME IN RUBBER

MANAGEMENT'S

Washington LETTER

A last minute roundup by a staff of Washington observers of government and business

► **KEEP YOUR EYE ON** the progress of Vinson's attempt to enforce WLB rulings by "economic sanctions" against employers. It is the Administration's substitute for military seizure, more than ever in public disfavor since Chicago decision in Montgomery Ward case.

When a Brooklyn war contractor rejected WLB's order to reinstate strikers, Vinson directed Army and Navy to cancel contracts; told WPB to withdraw all priorities; said such authority was vested in him by the rarely invoked Executive Order 9370.

But he also asked Congress to speed legislation giving WLB rulings legal authority.

Question raised by Vinson action: Can basic raw materials be denied during reconversion period to force other labor settlements?

► **RENEGOTIATION ACT** expires June 30, and Congress will not renew for another year if end of European war is in sight.

House and Senate studies show that at least 80% of all reclaimed profits would have gone to Treasury in taxes anyhow.

Better pricing standards grown from vast war experience now eliminate most of renegotiation situations in original contracts.

Renegotiation has been a terrific waster of manpower—in audits, special cost surveys, burdensome record-keeping, conferences, legal formalities.

► **CONTRACT TERMINATION DELAYS** may be reduced by "pre-termination agreements" with government procurement agency.

Army, Navy and Maritime Commission will negotiate with you on tentative settlement terms far in advance of actual cancellation, so that most of paper work can be out of way. Such agreements

often will cut to ten days the period required for preparation of final claim.

By mastering termination "know how" on small cutbacks now, you may gain months later in getting back to normal production.

Pretermination agreements must be initiated by the contractor but authorities are eager to help.

► **YOU MAY EXPECT** a casual visit any day from one of 500 field inspectors of War Manpower Commission now roving the country to check on compliance with employment ceilings, labor utilization and priority referrals.

These spot inspections are made by a special force borrowed from Labor Department's Wage and Hour Division, operating through 100 regional offices in principal war production areas.

Plants showing inefficient manpower utilization may get lower employment ceilings.

► **PACIFIC COAST** keeps manpower in region by holding up separation checks until laid-off worker presents new employment assignment from USES.

WMC calls the plan "voluntary" throughout, under agreement between employers, unions and local labor-management committees.

First month under controlled lay-off plan reduced Pacific Coast's labor shortage by 20,000.

Every contract cut-back frees some manpower; delayed severance check provides needed incentive for immediate re-employment.

► **SALES OF GOVERNMENT SURPLUS GOODS** currently average \$500,000 daily, but new surplus declarations by various procurement offices still run ahead of daily disposals.

Among items recently sold in lots of \$5,000 or more—sheets and pillow cases, motor vehicles, flashlight batteries, skis, snowshoes, tractors, road scrapers, double-deck beds, harness, motorcycles, army trucks, new auto tires.

Prospective buyers may obtain complete catalog of available goods from Office of Surplus Property, Treasury Department, Washington 25, D. C.

► **MEAT PRICE TROUBLES** worry OPA again. Live cattle ceilings drove many packers to concentrate on choice stock, tending to starve shops of usual utility grades. March quotas limit slaughter to 75% good and choice stock for all states except

South and Southwest, where premium slaughter is limited to 50% until April 1.

Disparity in price ceilings for different cattle grades created a run on premium stock, threatening general lowering of herd quality by leaving mostly culls for breeding.

► **SENATE SURVEY** discloses 55 government-owned corporations operating in U.S. through 700 branch offices and 68,000 employees; total assets, \$20,000,000,000; total borrowing power against U.S. credit, \$33,000,000,000.

George Bill for first time would subject these operations to periodic audit by Comptroller General.

► **NEW INDUSTRIAL PLANTS** are definitely contemplated by almost one-third of the larger manufacturing firms in U.S., according to a survey by American Institute of Steel Construction.

Among 673 firms with a credit rating of \$1,000,000 or more, 208 want new plants or considerable extensions for peacetime production.

Many companies plan to discard older plants, to take advantage of wartime advances in engineering, equipment, design, machine tools and layout; a sharp tendency is noted toward one-story construction; also a movement away from congested areas to air, light and elbow room of smaller communities.

Cleveland area showed largest proportion of new plants planned—43% of larger firms, against 35% for the Philadelphia industrial area, 31% in Boston, 26% in New York, and 23% in Chicago.

► **POSTWAR HOUSING PLANS** are suffocated by excessive federal controls and regulations, says National Association of Real Estate Boards in its urgent plea to Congress to "set the building industry free!"

Sixteen federal housing agencies should be consolidated into two—one for research and design, one for financing.

"There is no category of small business which is so oppressed, so restricted, so regulated and so hampered as the real estate and building field....Different agencies from time to time have different regulations or different requirements....The small builder has difficulty keeping up with them."

► **PUBLIC HEALTH SERVICE** finds war restrictions have thrown thousands of com-

munities behind in maintenance and development of water and sanitation plants.

Says report: "Present deficiencies indicate the need for nearly 5,000 new water systems and extension or improvement of 6,500 others....A combined population of some 30,000,000 lack adequate sewage facilities....Over 5,000,000 rural homes need new or improved water supplies."

► **WOOLEN MILLS** must operate principally on WPB production schedules until June 17 to supply 73,000,000 yards of fabric requisitioned for military, lend-lease and foreign relief.

Slender civilian allocations will be distributed exclusively on government priorities to garment makers who agree in advance to use cloth only on type and grade of outerwear specified by Office of Civilian Requirements.

There will be no point rationing of clothing, but Civilian Requirements will designate those communities in greatest relative need of factory shipments.

Same program prevails in cotton and rayon textiles, but without June 17 limitation.

► **FUEL ADMINISTRATION** rules no eastern coals may be consigned via Great Lakes this season for locomotive or industrial fuels in Middle West; such consumers must use nearby coals available by rail.

In new season beginning April 1, distributors of home fuel may supply via Great Lakes only 80% of previous year's deliveries to any retailer.

New regional shipping patterns will force many railroads and industrial users to higher priced coals.

► **ANTIMONY** is latest metal added to WPB control list (M-112); had been on free list since December, '42.

New army specifications call for fire-proof tents treated with antimony oxide. Navy also requires flameproof paints for combat ships.

Civilian supplies must be curtailed sharply until our new ore processing plants are in production.

► **PROPOSED CONSTITUTIONAL AMENDMENT** to limit federal income and inheritance taxes to 25 per cent has been demanded by legislatures of 17 states, and is before 30 others this year.

Petitions from 15 more states would require Congress to call a constitutional convention for submission of such

amendment, for ratification by three-fourths of states.

In wartime, 25 per cent limitation could be waived from year to year by a three-fourths vote in both Houses of Congress.

► CANADIAN ELECTIONS may tell a big story.

Growing spirit of independence and nationalism in Dominion tends to weaken traditional ties with British Empire and strengthen trade and cultural alliances with Western Hemisphere and Pacific.

Refusal of Mackenzie King Government to go all out on overseas conscription only reflects Canada's new interest in Pan-American horizons.

Traditional two party (Liberal-Conservative) alignment is distorted by Co-operative Commonwealth Federation, a patchwork third party of left-wing and Communist-fringe groups claiming balance of power in several provinces.

Expected result: A realignment of political allegiances straight across Canada, with a new rightish coalition in control; likely will entail a period of hesitancy in Canada's spectacular economic development.

► WHEN SECURITY censorship is lifted after war, U.S. will realize that about 25 years of air transport progress has been made since 1941. Sample postwar possibilities:

Passenger service California to Tokyo in 20 hours, fare about \$200; California-Shanghai, 36 hours, \$300; Seattle to Juneau, 4 hours, \$50.

Air cargo rates calculated from 10 cents a ton-mile, up—according to traffic flow.

While U.S. overseas aviation policy is stymied by conflicting ideas in official Washington, several competing carriers are ready with great plans, backed by their own money.

Big issue before Congress: Will shipping lines and railroads be in or out of postwar aviation pictures?

► WATCH THE RISE of Friedrich von Paulus, the German general who surrendered the Nazi 6th Army before Stalin-grad in February, 1943. Diplomatic grapevine names him as Stalin's choice to head Free Germany; his underground contacts with anti-Nazi generals during Polish campaign are said to have been an important factor in Russia's sweep to the Oder.

As Stalin raised Marshal Tito to lead

new regime in Yugoslavia, so he has presented von Paulus to spearhead Moscow's plan for postwar Germany. His ascendancy means that "Free Germany" is being built around nucleus of professional army and German military power.

► TOTAL U.S. WAR EXPENDITURES from Pearl Harbor to March 1, were \$245,000,000,000, of which 46% were paid from taxes; balance from increased public debt.

War expenditures to date are more than seven times the total of World War I, through June, 1919.

► WASHINGTON BUSINESS BRIEFS: Labor Department finds 450 union contracts now carry provisions for severance pay.... Britain's Food Control has allotted barley for 10,000,000 gallons of Scotch this year (about one-third normal production); will be ready for market in 1948....Eight states are considering an increase in gasoline taxes....Forty manufacturers of vitamins have launched the Vitamin Research Institute, to assist advance of national nutritional standards....Civilian truck allocations (186,792 units for 1945) are less than one-fourth total needed to meet essential requirements, says ODT....Filipino spokesmen are urging Gen. Douglas MacArthur for High Commissioner. (His father was first military governor in '98.) Philippines then would become citadel of U.S. security in entire Pacific....Maritime Commission offers \$3,000,000 in surplus marine engines, both gas and Diesel....German invasion scorched 150,000,000 acres of Russian crop lands (an area equal to half U.S. productive acreage). Possibly one-half of this scorched land will be back in production this year....Goodyear is building a \$1,500,000 plant at Natrium, W.Va., for production of new plastic sheeting for protective wrapping, like cellophane—both a war and peacetime need....Crop insurance for flax growers is available this year through Federal Crop Insurance Corp.; applications must be filed before March 31....Sturdy B-29 bombers are making aviation history in 3,000-mile non-stop circuits to Tokyo from Saipan; one came back recently with 147 bullet holes in fuselage, but nobody hurt....Navy now claims a 5-to-1 superiority over Japanese airpower; destroyed in first 3 years of war 9,819 Jap planes, with combat losses of 1,882 U.S. craft....The road back: OPA has removed all price controls from sleigh bells, aluminum horseshoes, dog and cat beds.



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operation of Plans. We will gladly study *your* case and help you design an attractive, appropriate and practical program.

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Our 92-page summary entitled "Pension, Bonus and Profit-Sharing Plans," covering the fundamentals of formulating and financing employee benefit plans is available. We invite you or your consultant to write for this study and to discuss your particular case with us—without obligation.

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TEST TUBES KEEP AMERICA YOUNG

By RALPH WALLACE

3,500 INDUSTRIAL laboratories, now at war, will create new products and more employment after victory, as they did before

EARLY in 1941, research scientists at the Minneapolis-Honeywell Regulator Company, which makes many of the nation's home-heating controls, were experimenting with new electronic devices in an effort to improve the company's products. At the same time engineers of the Army Air Forces were seeking a more sensitive automatic pilot.

Irrelevant and unrelated?

Not at all. The two groups got together and, within a few months, Wright Field and Honeywell engineers, applying new principles developed by the midwestern company, evolved an electronic automatic pilot which today is standard equipment on big planes.

That single instrument has helped shorten the war by months. Yet—and here's the point—our new electronic pilot would probably never have been created at all without the pioneering work of a research laboratory supported by private industry.

Throughout America an army of civilian scientists and engineers today is attacking and solving a prodigious number of wartime problems with a speed and flexibility possible only under conditions of free enterprise.



PHOTO BY GENDREAU

The wartime feats of industrial laboratories didn't just happen. They are the result of industry's research for better business

Supported by private capital, our industrial research laboratories quickly discover mass methods of producing penicillin, and thousands of lives are saved at the front. New steels for guns and nylon parachutes develop from their 'round-the-clock labors, so does synthetic quinine, and glass which floats.

As much as any single factor, America's peacetime research facilities, now transformed for the demands of war, provide our final margin of victory.

Naturally, the dazzling wartime feats of industrial research haven't just happened. They are simply the end result of private industry's standing order to its scientists: do the impossible. Jet-propelled planes, for example, could not have been created without supertough, heat-resistant metals laboriously forged in the laboratories of private industry for peacetime machinery; neither could remote control guns be fired without like victories in electronics.

Similarly, the fantastic uses of radar stem from an "it-can't-be-done" discovery by a Westinghouse scientist working at a peacetime job. From typhus-eliminating insect sprays to new plastics, our titanic war production would have been impossible without the foresight—and willingness to gamble money on expensive research—of literally thousands of American companies.

Research means new jobs

WHAT the work of our research laboratories means to the average American—not only in terms of winning the war, but in terms of new jobs and better products—is almost incalculable. Since 1870 (only three-quarters of a century in the life of the nation) 15 completely new industries, employing 15,000,000 workers, have developed from scientific research.

And the end is not yet.

Since World War I alone such research has built the huge radio, ethyl gasoline and plastics industries, to name but three. Even more significant is the fact that nearly half the present production of E. I. du Pont de Nemours and Company involves products undreamed of as recently as 1928. All these products, and all the thousands of jobs they have spawned, trace to industrial research carried out with private capital.

In a recent survey I made of American companies, I found an increasing recognition of the laboratory's value to business as a whole. Today some 3,500 companies maintain research facilities employing not far from 100,000 scientists and technicians—figures roughly double those of the 1920's. Some corporations spend an average of six per cent of their net to maintain such facilities; others, two per cent of their gross.

Before the war the Chrysler Corporation poured out \$5,000,000 annually on engineering research of various types; Westinghouse, some \$14,000,000.

"Our chief fear," one prominent industrial scientist recently told me, "is that tax laws will so reduce corporate profits that many companies may have a marked tendency to 'play safe' by slashing research expenditures. If that happens, the forward progress of our industrial economy—which means the forward progress of the nation—will receive a crippling blow."

One of the most outstanding examples of such research lies in the field of rubber.

When the automobile industry was first emerging, tire performance was so unpredictable that driving more than 100 miles without a blow-out was virtually unheard of, and total mileage before tires failed completely often was 1,000 or less. That meant the entire future of the auto industry—ultimately to employ 6,000,000 persons—depended to a great extent on the production of better and cheaper tires.

This crisis was met by pouring millions of dollars into rubber research. First George Oenslager of the Diamond

Rubber Company—later merged with the B. F. Goodrich Company—invented a group of chemicals called organic accelerators, which cut vulcanization time of tires and tubes 75 to 85 per cent. Not only did such chemicals retard aging and give higher tensile strengths but, by speeding up production, saved some \$50,000,000 in capital outlay. This, in turn, cut tire costs while improving quality.

Later, in 1914, the addition of carbon black to treads increased wear; in 1924, the laboratories of B. F. Goodrich first announced the discovery of chemical age resisters which greatly prolonged the life of tires. The results? Before World War I a standard tire for light cars cost around \$45; today, the same size tire retails for \$16. And tire life has jumped from 1,000 miles or less to 25,000 miles and more!

Only such intensive industrial research kept our wartime transportation from falling into chaos after the Japanese gulped up the rich rubber producing areas of the Far East. The first synthetic automobile tires ever made for sale in America—tires which were introduced to the public 18 months before Pearl Harbor to waken the nation to the necessity of mass production of synthetic rubber—were created after 14 years of intensive laboratory and developmental research by B. F. Goodrich. B. F. Goodrich's patents and know-how, together with those of Goodyear, Standard Oil, du Pont, and other leading companies, were poured into an industry pool so that our \$700,000,000 synthetic rubber industry could be built almost overnight—one of the greatest feats in the history of industrial chemistry. If it had not been for the enormous sums spent on such research, we would not be winning the war on synthetic tires today.

War goods in peacetime uses

IT is significant and important that this same achievement will result in a multitude of new peacetime jobs and products. Already, for example, scientists have found that B. F. Goodrich's vinyl resin synthetic—now used by the tens of thousands of tons in warships and planes to provide nonflammable wire and cable insulation—has more than 1,000 peacetime uses. These include disposable containers for motor oil, transparent thread to weave with silk and nylon and thus create run-proof hose, freeze-proof water pipe, yes, and artificial leather that is said to look better—and wear better—than leather itself. Many other rubber-like synthetics show similar promise.

Scientific research in almost every branch of industry, in fact, has created war and peacetime wonders. Some of the most exciting of these new developments lie in glass. For example, new glass fibers and threads have been developed which possess tensile strengths of 3,500,000 pounds per square inch, or ten times that of mild steel! Foamglas, produced by the Pittsburgh-Corning

Corporation, is a third lighter than cork and more buoyant. It is being used in life belts and life rafts. Other new glasses will bounce without breaking, bend like rubber, weave like silk—can even be sawed and nailed like lumber.

One of the most astonishing new adaptations of glass is in the actual structure of planes. Recently scientists in the Plaskon Division of the Libbey-Owens-Ford Glass Company brewed a molasses-like, plastic resin with remarkable binding qualities. Today, at Wright Field, a plane whose fuselage and tail sections consist of glass cloth, impregnated with Plaskon's new plastic, has been test flown with success. Actually, its fuselage boasts about 50 per cent more strength than the fuselage of any comparable plane without increasing weight. In effect, scientific research has created a superplane from what is generally considered a fragile material.

Out at the Libbey-Owens-Ford laboratories, too, I recently saw a new tempered glass so tough that, in multiple laminations, it is used as a transparent windshield armor for pilots. It will stop bullets up to .50 caliber.

Economy and comfort

TO prospective home-owners, a new LOF glass called Thermopane will be happy news. Embodying the first new principle in window glazing in 500 years, Thermopane is made up of two or more panes of plate glass sealed together at the edges through a glass-metal bond, with dehydrated air between. These dead air spaces enable a double Thermopane window to provide insulation equivalent to that of a 12-inch stone wall! This spells a potential saving of millions annually in heat losses from business buildings, where large glass areas have always been an insoluble problem for heating engineers. It spells opportunity also to design postwar homes with big window areas, without running into additional costs for fuel.

Scientific research in the food field likewise promises scores of new products—which means new jobs and profits for postwar America. Recently I enjoyed a meal at the American Can Company's laboratories in Maywood, Ill., where nearly 200 scientists work on every conceivable type of food. Hungrily, I downed a fluffy omelet, and at least a pint of milk. To my amazement, I learned these foods were several months old—and had all come out of cans!

I further learned that the new palatability of reconstituted dried eggs and milk similar to what I had been eating—for neither was really palatable until comparatively recent months—had been achieved largely through use of a new high vacuum chamber invented by American Can scientists. Formerly, cumbersome low-pressure chambers designed to draw rancidity-inducing oxygen from cans before the lids were clamped on had proved inefficient. One company, in fact, had to hold the cans in its vacuum chambers overnight to get

(Continued on page 91)

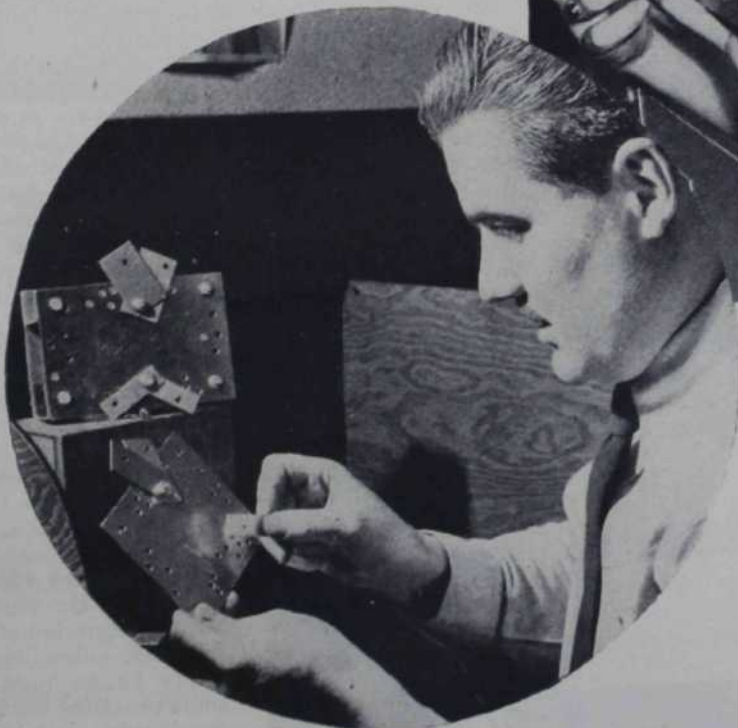
We've Stopped Hunch Hiring

By WENDELL KNOWLES

SIMPLE pre-employment tests not only give new workers a better break at Northwest Airlines; they also reduce labor turnover and assure the company competent employees



Putting in bolts behind a shield shows how good is the sense of touch



As a test of carefulness, the applicant is asked to make an exact assembly of a model

HOW ARE you going to make sure of getting your share of the good workers after conversion? Maybe during the war you have been forced to hire everyone who was able to walk in your door, but you'll have considerably more leeway after the war. And you will have more real competition after the war, too.

Let's suppose that your toughest competitor hires top-notch workers *exclusively*. He's going to get the jump on you on both quality and quantity production, and he's going to have less labor turnover than you do. That means lowered costs. How are you going to meet this competition?

At Northwest Airlines we have found that pre-employment testing has worked well as a selection instrument. It isn't the perfect answer, but it helps.

Wherever we have set our standards high enough, we

have hired *good* workers. We may have lost a few good ones in weeding out the poor ones, and we're sorry about that, but as long as we get no poor workers, it's better than the old grab-bag system of hunch hiring.

Furthermore, pre-employment testing is fairer to the worker. It keeps him out of a job where he is likely to fail and helps him into a position where his chances of success are brighter.

The first thing we noticed when we began to use tests was the sudden slackening of beefs from the supervisors. Formerly, supervisors out in the hangars were shoving some of the interviewers' choices right back at them. This stopped with the coming of testing. The totally incompetent were screened out in the testing process.

This is because the tests are much like the actual work on the job. If, for instance, the position requires an extremely careful worker, we give the applicant a test-job to see how careful he is.

This pre-employment tryout has been surprisingly accurate. Even in hiring general mechanics—workers who may go into the hydraulic, electric, sheet metal or any of the other shops—testing has consistently been able to pick out the better applicants. Northwest Airlines wants versatile mechanics, who can be transferred from engine service to power plant build-up, from radio to oxygen as the need develops. That means they have to be quick-learning, careful workers who do jobs right the first time.

Our task, then, was to label the applicants so we could

pick out the ones who would learn quickly and work carefully. Would tests do that? If so, what kind of tests should we use? We decided we could come closer to the right labels by devising our own tests.

For testing ability to learn, we used a four-section test—reading a simple blueprint, measuring to a 32nd of an inch, figuring simple fractions, and handling simple decimals. This test correlated highly with intelligence, yet it looked “mechanical” to the applicant, and actually told us whether that person could do fundamental processes which he would need in working for us.

As a carefulness test, we gave each applicant a pile of metal pieces to assemble *exactly* like a model in front of him.

The results turned out as we had expected. Sloppy, impulsive applicants threw their work together without stopping to plan or observe the peculiarities of the model. On the other hand, accurate, thorough workers planned their work carefully.

The third test was based on a distinctive feature of aircraft maintenance. Much of the mechanical work is concealed—that is, the mechanic can't see what his hands are doing. Therefore, we had the applicant put in rows of bolts behind a shield, so that he worked by sense of touch. To make the task more difficult, we required him to alternate the bolts—first one in from the front, the next one in from the back and so on.

These were our tests. We had tried them out by a sort of “straw-vote” technique, so we knew they would consistently select the kind of workers we wanted. The next question was, how high a standard would we have to maintain to make sure of getting good workers?

Tested on workers

WE answered this question by checking the performance of an actual group of workers. One hundred hired under the “open-door” policy (everybody was hired who came in the door) were tested about a week after hiring. After these 100 workers completed their training, we compared their test try-outs with their work-quality score. (This is a score based on the quality of the actual airplane parts made during training.)

This comparison showed that, from this group of 100, we got 25 whom we were able to rate as “good” on their work-quality scores, 50 to rate as “fair” and 25 as “poor.” This last group had to have extremely close supervision, they learned far too slowly, and their instructors despaired of ever getting

them to be careful. These were the ones we wished we didn't have. How were we going to keep from inheriting more like them in each group we hired?

To answer that, we asked ourselves more questions.

What percentage of poor workers would we have obtained if we had hired the top 75 per cent of the test scores? How about hiring the top 50 per cent, or even the top 25 per cent?

Our estimates showed this:

Hiring the top 75 per cent (which would mean testing 133 workers to get 100) would have eliminated a good percentage of the “headache” workers, besides increasing the percentage of both good and fair.

Hiring the top 50 per cent (or one out of every two applicants) does an even better job—we'd have gotten only four per cent poor, with 38 per cent good and 58 per cent fair. This probably is the most efficient standard for hiring large numbers of workers. Although, in a heavy labor market, hiring the top 25 per cent (and getting 56 per cent good, 44 per cent fair and no poor) would be decidedly worth while.

Let's do a little figuring on costs. Most companies say it costs them about \$200 to hire and train a worker. (You can substitute your own approximation for that amount.) This means that, by the time you've tried out Wally Washout for a couple of weeks and discovered that he's a consistently sloppy worker, he has cost you money.

Then you have your choice of firing Wally pronto, and taking your loss, or keeping him on and absorbing the steady loss resulting from the difference between his value and the value of a really efficient man. Either way, he's expensive, especially if there are a lot like him. If you have to take either loss on 25 workers out of 100—there's \$5,000, at least, which you won't see again.

Hiring expense saves money

ON the other hand, if you spend \$2 to job-test Wally Washout before you hire him, you increase your hiring cost a few dollars, but save the important money that Wally and his misfit brothers cost you. You could test 400 applicants to hire 100, and still save more than \$4,000 on every 100 you hire.

All this is in terms of *general* mechanics at Northwest Airlines—workers who are versatile enough to work in any of our shops. If our work were such that we could hire men or women for a specific task, such as a kick-press job, or putting on the left front wheel along an auto assembly line, I am convinced we could do an even better pre-employment testing job.

In selecting general workers, you can predict *potential* capacity pretty well, but you can't foresee the many extraneous factors on any of the several jobs, that may keep Marty Mechanic from reaching his potential capacity. The more specific the job, the more factors can be eliminated, and the more accurate your prediction will be.

“All right,” you say, “suppose I do want to use pre-employment testing, how do I begin? I don't know the first thing about testing people.”

The answer to that is the same as to any other problem of administration. Choose the right man to make the tests, and turn him loose.

Selecting the right man is important. He must have a solid background of technical knowledge about testing, certainly, but he must also have some practical common sense sprinkled in with his academic information.

In my opinion, he must have the creative ability necessary to construct his own tests to fit the specialized needs of his company, and to get the most from his testing program.

An intelligence test won't tell you whether Mildred White will be a better worker on a “two-hands-one-foot” machine or on a routine inspection job. Nor does an eyesight test at 20 feet divulge much about a lens-grinder's vision keenness at 20 inches.

On the other hand, a “tail-
(Continued on page 58)



Ability to read a blueprint, figure fractions and measure closely indicates ability to learn



LOHR

A New Road to Labor Peace

By O. A. SEYFERTH

A NEGLECTED essential of business is the human element. It implies a decent regard for the other fellow regardless of his circumstances

I AM an employer of labor. Each morning several hundred men report at my plant. The work is not easy. I operate a foundry, one of the so-called "heavy, dirty industries." I feel it my sacred obligation to operate that plant so that the welfare of every individual in it is my intimate and personal concern.

That does not involve paternalism. It implies only a decent, honest regard for the other fellow regardless of his circumstances, his training or education, as a fellow human being entitled to our full consideration. This principle is the fundamental of all true labor relations.

Reams may be written on policies, techniques and practices, but if they lack this vital truth they are barren,

sterile and unproductive. They accomplish no lasting good.

A clever device, a carefully turned phrase, and a promise without meaning may avert a temporary crisis; it may pacify the uninformed and trusting, but, in the long run, it will react on the author. Bad faith has no place in labor relations.

We have tremendously impoverished ourselves during these war years when the bulk of our production has been for armament rather than for consumer goods and capital goods. The day of reckoning is just around the corner. We face a reduced civilian economy in the years ahead. This implies labor unrest because discontent always arises when

If management and labor are to enjoy liberty, there must be understanding

people cannot satisfy their wants. It will take the highest type of labor statesmanship as well as statesmanship among employers to bring us through this period. Hence, it is imperative that leaders in labor and business evaluate the facts that confront us. We must jointly chart a course of conduct that will enable us to meet the emergency and preserve our respective houses, our democratic liberties and the American form of life. That is why I have been devoting so much of my own personal time to the problem of labor relations.

I am fully conscious that this subject is one on which men may have wide differences of opinion, yet be utterly sincere in their convictions.

Let us recognize that it is only through the democratic method of conference and discussion that we are able to reconcile divergent views and eventually develop an appropriate program

of action. Much of the current confusion exists, I believe, because of man's tendency to base his conclusions on the immediate facts before him—the events of a specific hour, or day, or even period.

We are prone to ignore the great lesson of history that human progress has never been constant, has never long continued in any single direction, nor maintained an even pace. Rather, it has taken a spiral form, moving ever onward and upward but sometimes apparently running in reverse, and at varying speeds.

We are living in a day when forces of yet unperceived magnitude are twisting and rending the human structure, reversing rivers and streams of thought, creating situations for which we have no precedent.

To bridge successfully this period I am convinced that we require a wisdom and maturity of thought, a conviction of public service, and a dependence and faith in the Creator far transcending anything that may have been expected of our fathers in a more quiescent age.

To get a proper perspective on the forces affecting us today, we might profitably review some of the developments in the field of labor relations during the past century or two. This review should cover, not only our own country, but Britain as well because so much of our thinking has originated there.

Although the common man in Britain, progressively through the centuries, enjoyed a larger measure of political and religious freedom than his contemporaries on the Continent, this does not imply that he enjoyed equal economic opportunity.

Right of collective action

IT WAS not until 1824 that British labor won the right to strike by collective action, as a net result of the depression that followed the Napoleonic wars. Moreover, it was not until 1875 that the Conspiracy and Protection of Property Act, repealing the Trade Union Act of 1871, authorized peaceful picketing and excluded acts in the conduct of trade disputes as subject to indictment for conspiracy.

In this country, labor relations was a subject of little concern to management until about the turn of the century when trade union membership, as a direct result of the McKinley era of prosperity, rose from approximately 500,000 in 1898 to more than 2,000,000 in 1904. Employers in turn organized to resist the unions and to oppose collective bargaining. Thus originated the traditional employer opposition to this principle which we find so difficult to live down today.

Labor's gains were few and limited in the years that preceded World War I. It lost a critical battle when the United States Supreme Court

held labor unions liable under the Sherman Act.

Early in World War I, President Wilson created the National War Labor Board and declared by proclamation that the right of employees to bargain collectively should not be abridged or denied. Instantly the labor movement began to flourish.

It is noteworthy that, both in England and America, growth of the labor movement has been in direct ratio to the interest government has taken in it. Turn off the sun of government interest and approval, and the plant ceases to thrive. This was demonstrated again between 1920 and 1932, when union membership steadily declined, falling to less than 3,000,000 in 1933.

Labor gains in '20's

THIS does not imply that organized labor made no legislative gains in the period. It obtained enactment of at least three laws important to labor: the Railway Labor Act, enacted in 1926; the Davis Bacon Act, fixing minimum wage requirements in federal construction contracts, in 1931; and the Federal Anti-Injunction Act, prohibiting injunctions in labor disputes under specified conditions, in 1932.

We are all familiar with the gains labor has made under the New Deal, and we are concerned with what lies ahead. Will government continue to be the factor it is today in the labor movement? Is an extension of government activities in this field desirable—from the union standpoint? From the employer standpoint? From the public standpoint? What should be the attitude of industry?

These are pressing questions but before we attempt specific answers we should relate the problem to other happenings and evaluate, if possible, the cosmic significance of the whole.

In this effort what is happening in

government—not during a specific administration or program like the New Deal—but in governments everywhere, and more particularly, in the relationship of the individual to his government, becomes a matter of major moment.

Over a period of several centuries, mankind laboriously achieved the present democratic form of government. Much of this progress was purchased by the blood of patriots. Our own American Revolution is an example. But, as the philosopher, Nietzsche, so aptly observes, the disintegration of a democracy begins the moment a people take their hard-won liberties for granted.

In Europe, as well as in this country, we have been experiencing a reaction to the democratic movement for nearly a century. Having won and made secure, as they fondly dreamed, their political liberties, people became more seriously concerned with their economic state. Hence the development of the trade union movement.

Change from an agrarian to an industrial civilization, from a nation of farmers to a nation of city dwellers, from a people accustomed to living off the land and able to wait for the harvest to a community dependent on the weekly pay roll, accentuated this trend. Security of employment became a higher consideration than freedom of thought.

Government took instant advantage of this trend. Since organized minorities are always more effective than the unorganized and apathetic majority, government, at the behest of organized minorities, began to impose controls upon the people. It restricted their liberties for one reason or another. Then Communism rose in Russia, Fascism in Italy, Nazism in Germany.

In this country we have seen an identical trend. Government has taken advantage of popular demand for greater economic security. It has gone a long way toward multiplying its powers through regimentation of the American people. It has encroached on local home rule and states' rights, and curtailed the proper choices of the individual in respect to his own personal affairs and in the conduct of his business, even in matters where the welfare of society was only remotely affected.

The road to tyranny

DURING the war, this regimentation has proceeded rapidly, always under the plea of war's necessity. Now a substantial school of thought, particularly within government, contends that these policies must be perpetuated at war's end to preserve the national economy and maintain full employment.

These happenings are not isolated instances, creating a temporary inconvenience and

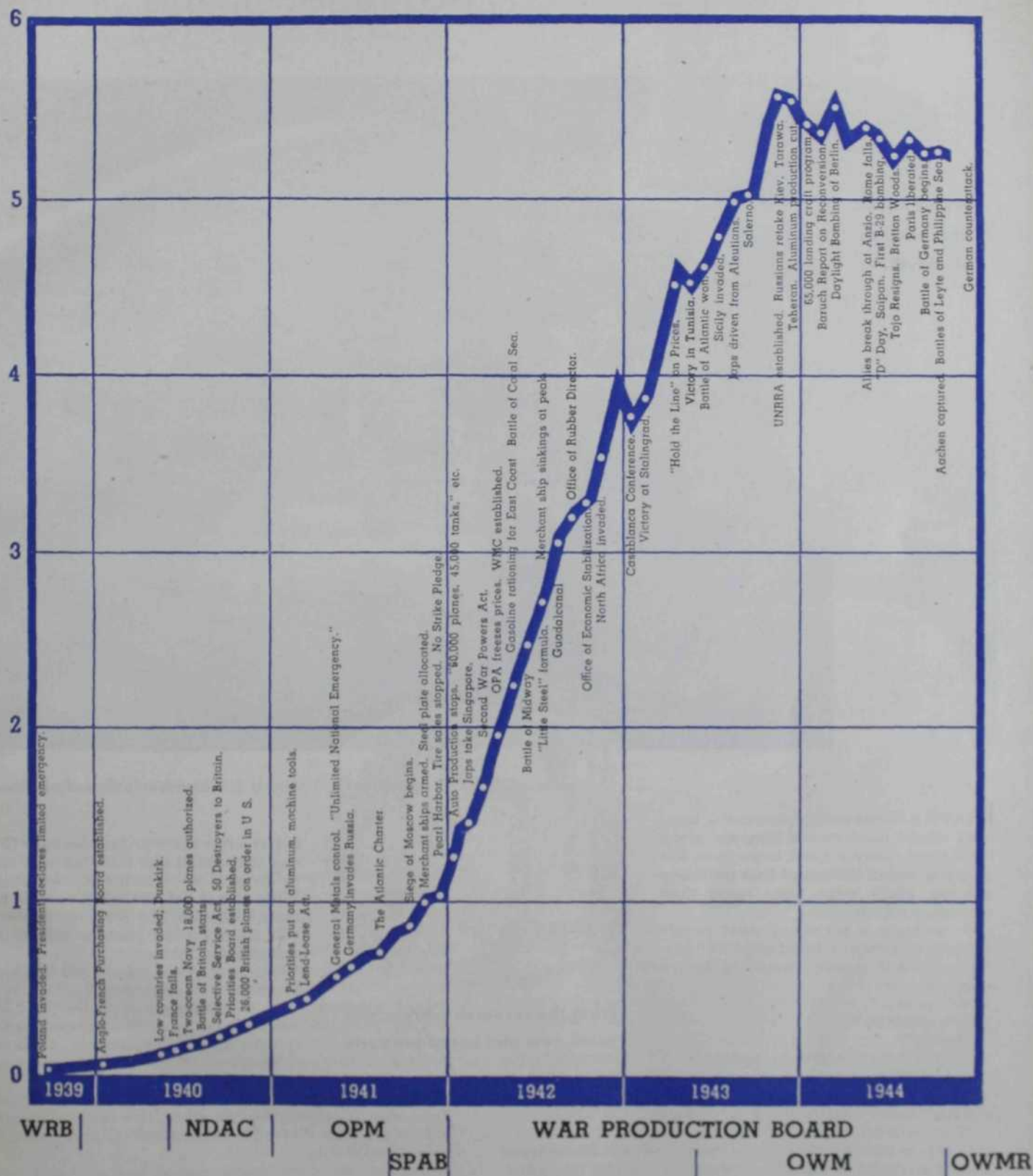
(Continued on page 72)



"Have you an appointment?"

MUNITIONS
PRODUCTION
BILLIONS OF
DOLLARS

How Our "Decadent Democracy" Prepared Itself for World-wide War



THIS chart, adapted from one released last Jan. 1, by the Director of War Mobilization and Reconversion in his *First Report* to the President and Congress, indicates the speed at which America re-tooled and reached the peak of production in arming itself and her Allies.

From practically zero, our munitions output rose to the

amazing rate of over \$5,000,000,000 per month while maintaining a standard of living far above that which we enjoyed in 1929. To achieve this, more than \$20,000,000,000 have been invested in new or expanded industrial plants, and more than 18,000,000 men and women have been added to war activities. (Dollar figures are August 1943 Prices.)

Make Way for the



We've never
had enough
of anything



The U.S. Chamber's Board of Directors.

I HAVE a friend in the advertising business whose hardheaded common sense has helped many a client to success. Recently he began to suspect that too many postwar plans were little more than souped-up daydreams.

So he made a survey of what people thought of postwar prospects.

He asked if housing would be better after the war.

"Of course!"

"Automobiles?"

"Surely!"

"Would we have private planes?"

"No doubt!"

"Well, how about watches—will they be better in the postwar days?" Again the same answer.

"They will be."

At this point his common sense went to work. He believed that, if anything is hard to improve, it is a fine timepiece. So he asked those who felt that watches, too, would be much better, a few years from now, that difficult little word, "Why?"

Back came the ready reply:

"Well, isn't *everything* going to be better after the war?"

Like my advertising friend, I suspect that everything, including living standards, is *not* automatically going to be



From the research worker will
come new and better products

better after the war just because the war has stimulated our thinking and spurred us to greater activity in certain fields. Whatever is better than it used to be will have to be worked for. Otherwise, postwar plans are not plans at all—only economic soap bubbles.

Common sense should tell us that war is death and destruction. War is debt. War is dislocation of people. War is sudden waste of savings and resources slowly built up through decades of heavy toil.

That's what war really is and must always be.

Yet, a courageous, industrious nation can learn something from war. It can improve its productive capacity, learn new efficiency, draw its people closer together in common bonds of understanding.

Best of all, a victorious nation has a chance—only a chance perhaps, but still a chance—to write a peace that will be enduring.

But peace, too, is a postwar product. If it is to be any better or more enduring than those of the past, we must work to make it so.

To believe that war is a novel way to invent better refrigerators, streamlined trains or more comfortable strat-

Little Man with Big Ideas

By **ERIC A. JOHNSTON**

President, U. S. Chamber of Commerce



CHASE-STATLER

These men give their time to the job of promoting a dynamic economy

liners is unrealistic dreaming. As a matter of fact, we could let product improvements more or less take care of themselves if merely having better products would insure post-war progress and prosperity in our country. Somewhere at a basement workbench is a man with an all-consuming interest in radio, plastics, electronics, small motors, motion

pictures, or what not. He is the sort of person we all know—never satisfied with the way anything works, forever wondering why it should not be simpler, cheaper or better. We can count on him for some new and improved products after the war.

Somewhere else in an industrial laboratory are other men who are under the most general instructions from the management to test, devise and inquire into anything that interests them. The management itself does not know what to look for. It



The employee must receive a fair share of the profit



The manager, the organizer, must see a chance to profit

merely knows that research is necessary to progress, that every product can be improved, that laboratories pay dividends over the long pull. From those industrial researchers, too, we can count on new products after the war.

All over America this process of intelligent dissatisfaction goes on. It is in the tradition of our people, a part of their national character. You find it in a Luther Burbank, with his restless interest in cross-breeding plants; in a Steinmetz who had a notion that lightning could be man-made in a laboratory; in a Dr. Ernest Lawrence, who learned in school that an atom is "the smallest particle of an element that can exist," and then built a machine to smash the atom.

Only a few months ago two young scientists succeeded in reconstructing the molecule of quinine, a task which has challenged other scientists for a generation. And where of all places did they do it? In a factory in Cambridge, Mass., where the main interest was the manufacture of Polaroid lamps.

What can the average man or woman do to help such people? In the early stages of their work, practically nothing.

ing. By their very nature, they must go on, undeterred by failure and discouragement, barely interested in the "practical" application of their efforts. They are the men who solve the crossword puzzles of nature itself, and it is characteristic of most of them to look for another puzzle rather than try to win a prize for the one they have just solved.

But there is another type of person who is as necessary to our progress and prosperity as the inventor. That is the man or woman who knows how to finance, manufacture and distribute the practical results of new ideas and new processes.

This is still a land of opportunity

OUR real job of postwar planning—one in which we can all participate without being geniuses—is to establish now the basic conditions which encourage such people to work, to restore and to put our new skills and efficiency to use.

Everywhere one looks he sees opportunities waiting to be developed. Even here in America we have never had enough of anything. We do not have enough leisure, education, health, housing, transportation, food or personal service.

Not only have we never had enough but we shall have less than ever when the war is over.

Since Pearl Harbor, more than 1,000,000 businesses have closed their doors. Forced out by war? Yes, and no. Each year for the past decade, according to the Department of Commerce, between 250,000 and 450,000 enterprises shut up shop.

What keeps the country growing, of course, is that normally more new businesses start than suspend. That is, more people see—or think they see—an opportunity. They replace the enterprises which for various reasons wash out. Thus, businesses, like human beings, have a birth and death rate.

My concern for the postwar world is that we must avoid business birth control. We must plan now to replace not only the net loss of 560,000 businesses since we entered the war, but must initiate three times that many. Our concern must be that men and women with good ideas and the courage to try them shall have the maximum opportunity to take their chance.

There is no future for a country that spends all its energy in keeping old business straight and has none left to encourage the newcomers. Life would be dull indeed in a community where the doctors specialize in old folks' ailments but where it isn't popular to have a baby. A nation without new industries is like a country with a falling birth rate.

What are the conditions under which more products will be invented and manufactured, more shops opened, more services offered? That is, what will increase the business birth rate of the United States?

The answer seems so obvious that one hesitates to offer it. It is something we have forgotten and played down in our absorption with social and political reform for the past dozen years or more.

It comes down to this—and we may "like it or lump it" as children say:

New businesses will be born, and established ones remain healthy only if the investor with surplus funds, the worker with manual skill, and the manager with organizing ability each sees a chance to profit—and to keep a fair share of that profit.

Does this read like a soft approach to a plea for higher profits for big business? It is not intended for that purpose, but let's look at it from that angle.

I want to see Chrysler Corporation active, ambitious and prosperous because I know that when Chrysler is busy and profitable, things happen to small business, too. A Chrysler survey showed 8,079 individual subcontractors in 856 cities and 39 states.

It doesn't take much imagination to see that the local merchants, real estate firms, banks, local governments—in short, everybody in those 856 cities had a direct interest in the well-being of the Chrysler organization.

Or take the statement of D. W. Fraser, president of the American Locomotive Company:

"Without the more than 500 subcontractors, suppliers and the thousands of men and women in garages, machine shops and small manufacturing plants we could not have done our part of the job. . . . The majority of our subcontractors and suppliers are small shops—many of them with five to 15 workers and most of them with less than 200."

The incentive to make these thousands of transactions, however, must start at the bottom, if the whole 137,000,000 of us are to put our backs into the job of rebuilding our economy.

Our real concern starts with some man who has learned a trade, has a job, but who does not expect to get much farther unless he starts out for himself.

It does not matter who he is. He can be in the construction industry, drive a motor truck, manage a chain drug store—or, if you prefer, make him an undertaker's assistant.

To put even himself to work he will, on the average, require about \$5,000 of capital at the least. If he advances to the point of employing nine others, he will need to have \$50,000 in the business, because \$5,000 is about the average capital per job in the United States.

Here, then, are his choices:

He can stay on his present job which pays him a pretty sure \$50 a week. He has built himself into it by steadiness, seniority, acquaintance with his employers and their customers. He has a partly-paid-for home, some insurance and a growing family. The easy thing to do is to play safe and let someone else take the risks.

Business opportunities

OR, he may find someone already in the business in a small way who needs not only a little more capital but the drive of a younger, alert partner who can bring new customers or new ideas. Such opportunities are advertised every Sunday in the *New York Times*, but it is a risky business to start out with strangers who must also be partners and fellow workers.

His third choice is to find someone with money who is looking for something more profitable than listed common stocks, bonds or savings bank interest. Such a person knows the old ventures which close each year are as numerous as the new ones which start. He knows that a firm with three employees or less has three times the chance of closing as one with 50 or more. Even a sizable business with 20 employees is twice as likely to fold up as the firm with 50 or more.

If he doesn't know such facts of business life, he has no money to invest unless he inherited it yesterday.

Even the workers for a new establishment have their doubts. They want job security, a place to settle down, continuity of employment through the years. If they have any choice at all, the best and most efficient workers prefer employment in a strong established business.

So here we have several groups of people—one with skill

(Continued on page 86)



The bank must be more than a money vault



The farmer has a stake in general business progress

Common Sense is His Slide Rule

By HERBERT COREY

BIG THINGS grow from little things. Oaks from acorns.

Cloud Wampler spoke his mind at a committee meeting one night. Wordage, about 83. Time, two minutes. Action, unpremeditated. Method, low pressure. Reception, excellent. Results, happy.

No one yet knows what may come out of it. Labor relations at the plant of the Carrier Corporation in Syracuse are more than excellent. As the outsider sees them they are practically dazzling. No copyright on the theory. Any employer can use it. The only rule is that cards must be slapped down on the table.

Mr. Wampler says that, if everyone on both sides of the table plays fair, everyone will get along fine. The same rule, he thinks, goes for government. If a government is honest and candid, the people will support it. Through hell and high water.

The officers and a committee from the employees of the Carrier Corporation were at modified loggerheads that night. Not quarreling. Merely not agreeing. It seemed to Wampler that neither side knew just what it was talking about. Neither did he.

But he wanted the facts.

Begin at the beginning. The Carrier Corporation is a pioneer in air conditioning. Dr. Willis H. Carrier, present chairman of the board of directors, grew interested in the improvement of indoor weather when he worked for the Buffalo Forge Company, almost 50 years ago. In 1911 he published the results of his observations. Four years later the Carrier Engineering Corporation was formed. The present Corporation is the largest enterprise of its kind in the world today.

The trade, industry, science—call it what you will—of air conditioning is one of the marvels of our day and a sure-fire factor in our postwar future. It gives us indoor weather as we want it. It saved enough space over old-fashioned fan and blower methods to give the new Statler Hotel in Washington the equivalent of two extra floors. It cools deep-level copper mines until men can work them. The Norden bombsight, which enables our fliers to pinpoint enemy installations, functions efficient-

ly because of it. A tropical infection which laid our soldiers low in Burmese jungles is curable only by conditioned air. Plenty more later about its No. 1 priority in war and peace. The Navy has given the Carrier Corporation five E's. Tops to date.

Carrier's had been one of the first to realize that living costs have a direct relation to wage rates, and had agreed to make adjustments as the relation changed. The cost of living rose under the forced draft of war. The Corporation's representatives said it had only risen 5 per cent. They had authentic figures to prove it. They wanted to be fair—but there you were. In black and white. The men said living costs had risen 25 per cent. They had authentic figures to prove it. They, too, wanted to be fair—but there you were.

Orators sat down mopping their foreheads. Mr. Wampler walked down the center aisle to the chairman's desk. When he walks he attracts a certain amount of attention. Better than six feet tall, broad, not too thick, solid muscle, an approximate 200 pounds. He sat on a corner of the desk, one foot on the floor, the other dangling.

Cost-of-living speech

"I HAD not intended to speak tonight," he said. "I don't know what the costs-of-living facts are. I don't think any of you do, either."

Sounds of indrawn breath from the audience.

"But I know that living costs have gone up more than 5 per cent. My wife keeps house. I do not think they have risen 25 per cent, or I'd have heard more about it. Let's find out."

Silence from the floor.

"You fellows name a man and we'll name a man and the two can pick a



CLOUD WAMPLER, president of Carrier Corporation, proves that business and its workers can help each other in an understanding partnership

third man and they can get busy. The Corporation will accept their decision." End speech.

Two men named a professor from Syracuse University and he made a survey. No statistics. They asked about groceries and rent and laundry soap and coal and reached an agreement without aid of economists or experts or business agents. Pay was raised accordingly and everyone said, "Why, this is easy."

A new relationship had been created in the plant. The men and the bosses work together as they never had before. That is not merely a pleasing statement, but the fact.

Cloud Wampler—now the second president the Carrier Corporation has had in its life of 30 years—walks through the works when he has time. He does not know every man by name, but he knows so many of them well that when a fuse blew and a committee meeting was blacked out he was able to reply to every speaker by name.

Goal of all employee relations at Carrier can be summed up in ten words: "To make Carrier a better place in which to work." That's the measuring stick by which all such activities are measured. If they contribute toward

(Continued on page 78)

If You Make It, Can You Sell It?

By LAWRENCE SULLIVAN and RALPH PRYNE

WHEN OPA price theories meet the manufacturers' reconversion facts, the consumer frequently finds that he can get no goods at all

WHEN a manufacturer begins to resume civilian production, pricing is his first great problem.

OPA says it will "hold the line" generally at 1942 levels, yet will grant "adjustments" in specific cases where higher production costs are demonstrated in comprehensive accounting records.

Even this statement of pricing objectives was preceded within OPA by a long battle between two points of view.

Those who have confidence in the market as the best adjuster of prices maintained that quick reconversion with its resulting employment would come faster if manufacturers could make profits as they moved along to full production. Excessive profits, too high prices, would melt through natural and normal curbs in the resulting competition.

The other school, which leans more to the thesis that Government must relax controls very gradually, took the view that, if prices were kept low, manufacturers would be forced into high gear to get out of the production area where losses are bound to occur.

For the time being, the low price-high production school has won. Anticipating objections from small business with little capital in reserve to absorb initial losses, and from workers who want jobs in enterprises which may be obliged to reopen slowly, OPA stands ready with its "adjustments" to turn off the heat where necessary.

In the day-to-day application of this policy, OPA takes the ground that all reconversion prices must be based on volume production under stable operating conditions, not on the initial higher costs of hand-to-mouth production under "spot authorizations" releasing limited materials and manpower for civilian goods.

As a result, many plants today are unable to resume civilian production on a limited scale, because they can have no assurance from WPB and WMC that

they ever will be granted the materials and manpower necessary to attain volume production.

In a very real sense, therefore, OPA is defeating its own ends, because every time it limits production by failure to grant a profitable price, it contributes to the growing pinch on civilian supplies which is the very root of inflation. Manufacturers plead for a more flexible policy on reconversion prices—high enough to cover today's actual costs on limited

production, and subject to review when mass output actually is achieved.

Under prevailing administrative routines, OPA divides all products into two broad categories—old items resumed after a wartime suspension, and new items. Old items, as a general rule, must be resumed at the 1942 price at which they were suspended; new items may be priced on the basis of the "nearest comparable product." The delay incident to these determinations, both in Washing-



GEORGE LOHR

More than two-thirds of the manufacturers in a position to resume civilian production are stymied by OPA's price maze

Are YOU as healthy as you'd like to be?



YOU KNOW, protecting your health isn't enough—you have to *build* it, too.

If you eat the same foods that most Americans eat, you're not likely to be a victim of "deficiency diseases" like beri-beri, pellagra, or scurvy. You're not apt to die of malnutrition, either.

But perhaps you get tired easily... have occasional indigestion... a pasty complexion... unhealthy teeth and gums... or other minor troubles. Many folks have such annoying little ailments. You may think this is only natural but it isn't.

Did you ever stop to think that maybe a better *diet* would make you feel better—and look better too? Medical scientists are

investigating the possible effect of food upon those organs whose proper functioning is necessary to good health—whose improper functioning may lead to various diseases.

Consult this chart of basic daily requirements. Does *your* diet contain them all? Remember, it's a *balanced* diet that counts. Not a lot of some foods this week, and a lot of others next week—but *all of them* regularly!

Proper cooking is vitally important to nutrition, too. The new Metropolitan Cook Book contains many suggestions for making food healthful and attractive. Write for your free copy.

*Every Day
you need...*



MILK—Adults need a pint, children a quart, as a beverage or in foods



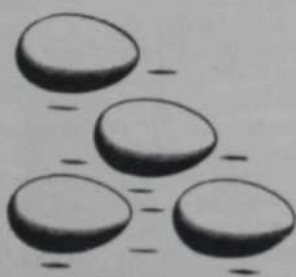
POTATOES—The normal requirement is one or more servings



OTHER VEGETABLES—Two servings—some raw, some cooked—fresh or canned. One green-leaf vegetable



FRUITS—A citrus fruit—orange or grapefruit. Other fruits, raw and cooked, including tomato



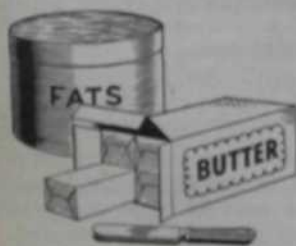
EGGS—For an efficient diet at least four eggs a week



MEAT, FISH OR POULTRY, AND CHEESE—At least one healthy serving a day



BREAD AND CEREALS—One or both at every meal, either whole-grain cereals or enriched bread



BUTTER AND OTHER FATS—Two or three tablespoonfuls as a spread or in cooking



WATER—Six to eight glasses throughout the day

Health authorities believe that all these foods are needed to fulfill normal nutrition requirements. If your diet contains them all, and you still feel tired, nervous, and lack resistance, then you should have a thorough physical checkup by your doctor.

Metropolitan Life Insurance Company
(A MUTUAL COMPANY)

Frederick H. Ecker
CHAIRMAN OF THE BOARD

Leroy A. Lincoln
PRESIDENT

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TO EMPLOYERS: To help your employees maintain good health in wartime, Metropolitan will gladly send you enlarged copies of this advertisement for posting on the bulletin boards of your plant or office.



YOUR RED CROSS FACES THE GREATEST TASK IN ITS LONG HISTORY—GIVE NOW—GIVE MORE!

ton and OPA regional offices, sometimes postpones production 60 or 90 days after materials and manpower have been authorized.

Seasonal items suffer most from delayed action in pricing. A toy manufacturer, for example, submitted proposed prices last summer on several new items, based on similar articles already on the market. Hearing nothing in the stipulated 20 day period, he assumed his prices were O.K. and went into production. After 60 days, OPA inspectors examined his books, but gave no hint of trouble ahead. Late in September he was summoned to court to answer an OPA injunction suit seeking to restrain sale or shipment of his products for the Christmas wholesale trade, then in full flow.

The OPA attorney suggested a consent decree, but the manufacturer, fearing he might lay himself open to heavy fines, spent \$300 on counsel. The attorney then discovered that OPA would not permit his client even to apply for prices until the injunction filed by the Enforcement Division had been cleared in court. He then acceded to the consent decree.

Being still without a price, the manufacturer went to Washington where he was told the comparable products upon which he had based his original application had not themselves been approved and informed that the price charts he had prepared at considerable expense were all wrong—that the 20 day limit for approval applied only if the application is filed correctly!

He then filled out new forms, and his prices were approved. After spending \$800 on fees and traveling expenses he had his new prices in October—after the wholesale toy season had almost closed.

Price-fixing as it works

ANOTHER manufacturer filed in May on a Christmas item which he proposed to sell at \$40 a dozen. Hearing nothing from OPA in 30 days, he rented a building, bought machinery and raw material, and started production. In June he sent his sales manager to New York, where customers greeted his new item enthusiastically. He began to advertise and orders piled in. Volume was so encouraging he decided he could reduce the price to \$36 a dozen.

But at mid-August, came a letter from Washington stating his ceiling had been set at \$27 a dozen. He called in an accountant who showed that his production cost was \$32.64 a dozen. On appeal, OPA reaffirmed \$27 a dozen—because that was what "comparable articles," not made since 1942, "sold for at that time."

Such negotiations with OPA then may extend anywhere from a month to a year.

A survey conducted late in 1944 in one West Coast area, disclosed that 46 manufacturers had applied for prices on new products in 1944. In 22 cases no decision had been reached 18 weeks after the application was filed; ten other applicants got "unprofitable" or

otherwise unsatisfactory prices after waiting three to 40 weeks; the remaining 14 got satisfactory prices approved somewhere between one and 53 weeks after the original application.

These figures mean that among 46 manufacturers who cleared both the WPB and WMC hurdles on materials and manpower, only 14 (31 per cent) had negotiated the last obstacle—an approved price which promised a margin over production costs. More than two-thirds of those who found themselves in a position to resume civilian production in a limited way under prevailing local conditions, still could not work their way through OPA.

Here, obviously, is a situation which might retard reconversion disastrously over wide areas when materials and manpower are released generally for civilian production. Today's price applications on new products are a mere trickle. After the war they will come in a flood. Business managers will not then be in a position to wait 18 to 40 weeks for an official decision on price. The problem bears directly and acutely on the foremost issue of postwar prosperity—quick absorption of war workers into peace production.

Small business enterprises apparently are under the greatest handicap in this pricing melee. Many of them have not the resources to maintain a representative in Washington for the weeks—sometimes months—required to bring an application through the several OPA review divisions.

True, it is the stated policy of OPA to "process" all new price applications in a maximum period of 20 days, but experience has shown that this cannot be done. Some are handled in the regional offices, others in the district offices; yet all original applications must be filed in triplicate with OPA headquarters in Washington.

First, they are screened for those "appropriate to field office processing." In these cases, the papers then are sent to the regional or district office with general instructions. All remaining cases are determined finally in Washington. No applicant can know, when he presents his case, where it finally will be decided. In some cases, as many as 60 days have elapsed between the filing of an application and its assignment by Washington to the field office for investigation.

Not until the papers reach the designated field office does the price survey really begin. Then a local OPA office in California or Oregon may find, after 10 or 20 days, that the only comparable article presently in production comes from Birmingham or Syracuse. The new price calculation, therefore, must take account of many regional differentials in wages, freight rates, proximity of markets, sources of raw materials and myriad additional variables which make unequal cost equations in different states. While all this is going on, the would-be producer necessarily is stymied—holding proper material and manpower authorizations, but unable to turn

a wheel without an approved price.

In one instance, three local rubber, aluminum and die-casting plants induced a manufacturer to make special work gloves used in handling extremely hot products. Apparently all former manufacturers had gone into other fields. War production in the plants involved was being curtailed by refusal of workers to stay on the job without this special protective glove.

In March, the new firm started producing the gloves and filed its prices with OPA at \$6 a dozen, although the initial production cost \$15 a dozen. Practically the entire output was contracted by the three local customers. Months later OPA notified the manufacturer that a previous ceiling price of \$3.82 would apply.

A veteran's business stopped

ANOTHER case concerns a returned war veteran. He had \$500 with which to start in business. Knowing something of ceramics, he set up to make a woman's dress ornament. Like so many others, he assumed that after 20 days he was in the clear on his price petition. He did well, until OPA came through with a price about half what he had requested, and far below his actual cost. Upon appeal he was told the price had been set on a basis of volume production; that if he would invest \$5,000 or \$10,000 more in equipment he could produce the article profitably at the price OPA had set. The veteran abandoned that idea.

Wrote one manufacturer: "Things have reached a stage where a successful business must have a priority specialist to keep it out of trouble with WPB; a wage-and-hour specialist to keep it out of trouble with WLB; a contract termination specialist to recover its liquid working capital from cut-backs and terminations; and now an OPA specialist to supervise price applications. No one man can grasp the volumes of regulations being thrown at business, the digesting of any one section of which is a man-sized job."

A detailed survey of many specific pricing problems in a number of unrelated fields suggests an immediate re-vamping of the OPA procedures to speed decisions:

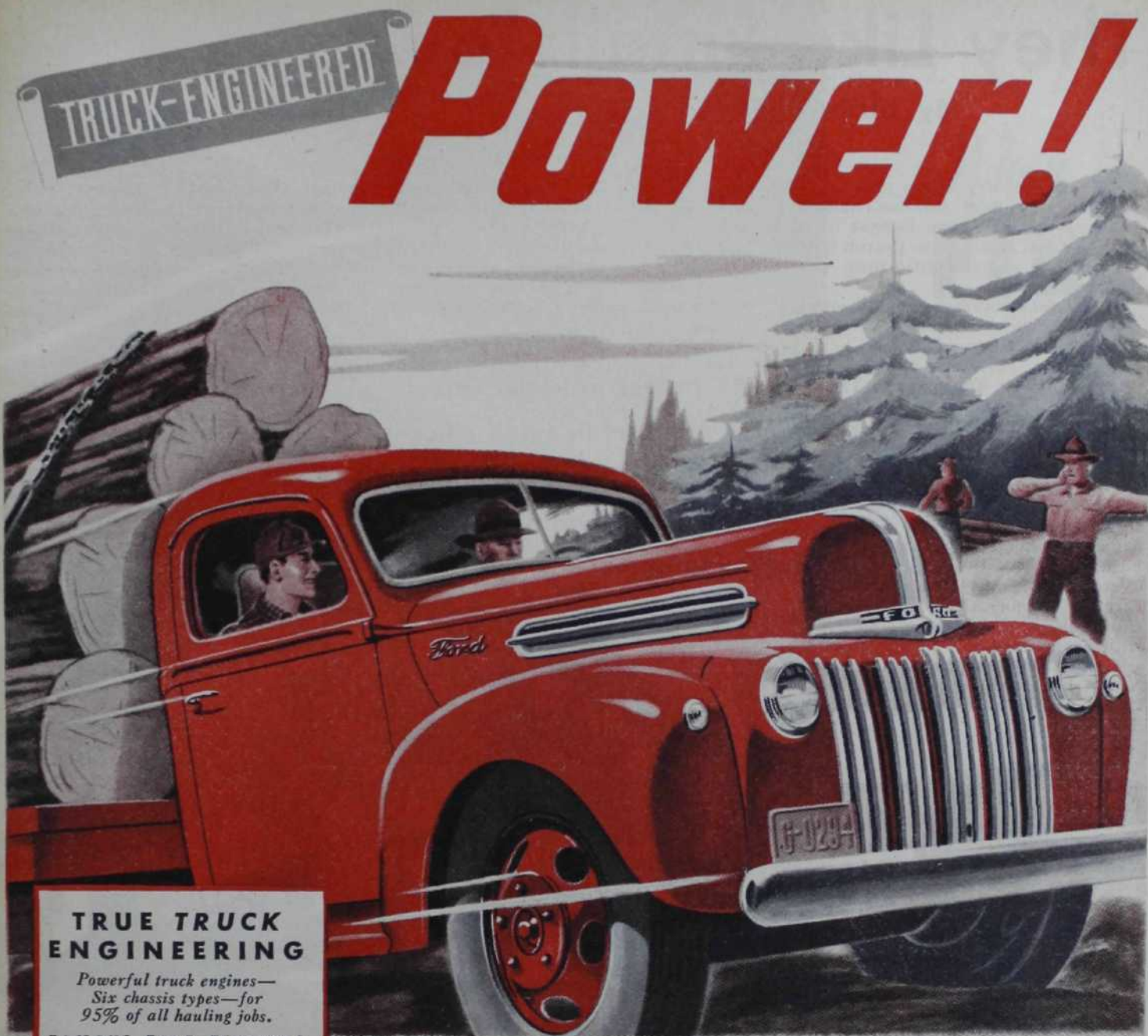
1. Price applications filed in good faith on the basis of estimated costs should be approved *pro forma* pending a survey of actual costs under going production experience.

2. OPA price determinations after production has begun under "spot" authorizations from WPB and WMC should be based on relative civilian need for the item in the applicant's production area, as well as upon comparable costs in other markets far removed.

3. A system of tentative prices should be authorized, on the basis of producer's estimated costs, rather than comparable costs alone, to encourage marginal production where both manpower and

(Continued on page 60)

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS



TRUE TRUCK ENGINEERING

Powerful truck engines—
Six chassis types—for
95% of all hauling jobs.

FAMOUS FORD FEATURES

- Service ease . . . all chassis units readily accessible, hence—
- Low maintenance cost.
- Universal service facilities.
- Extra-sturdy full-floating rear axle—pinion straddle-mounted on 3 large roller bearings—3 axle ratios available—2-speed axle optional at extra cost.
- Powerful hydraulic brakes—exceptionally large cast drums.
- Needle bearing universal joints.
- Shifto-Guide speedometer dial—saves fuel—saves wear.



LOOK at the trucks at work on tough hauling jobs. You're bound to see some of the million-and-a-half Ford Trucks that are in service here in America! Ask the driver or owner how Fords stand up. Ask him how the maintenance figures compare with those of other trucks, many of which cost far more than the sturdy Ford. Ask him what his *next* trucks are going to be.

If his answer is what our experience says it will be, you'll have still more solid evidence of the dollars-and-cents

value of Ford *truck engineering*. And you'll have all the reason a businessman wants for finding out *why* more Ford Trucks have been built and bought than trucks of any other make.

Ford truck engineering studies every stress and strain; applies the strength that's needed. It matches the truck chassis to the task—in power, in frame dimension, in the capacity of every chassis part. It fits *your* truck to *your* job, for *your* profit. Ford truck engineering is the reason why a third of America's trucks are Fords.

NEW FORD TRUCKS ARE AVAILABLE NOW, for essential civilian service. Your Ford Truck dealer will gladly help you make application.

"STARS OF THE FUTURE". Listen to the new Ford musical program on all Blue Network stations. Every Friday night—8:00 E.W.T., 7:00 C.W.T., 9:30 M.W.T., 8:30 P.W.T.

FORD TRUCKS

AND COMMERCIAL CARS

TRUCK-ENGINEERED • TRUCK-BUILT • BY TRUCK MEN

They Like Small Towns

By LUCAS FREEMAN

WHY IS industry where it is?

What considerations can induce a business to move from Detroit to Bad Axe, or from Bad Axe to Detroit? Both the big city and the little town would like to know.

Industrial advantages of a big city are fairly obvious—nearness to market, to labor supply, to shipping facilities, to adequate power. These are a few. Reasons big industries are found in small towns are not so quickly evident. Sometimes it is only happenstance.

"Our business headquarters are in Hagerstown because my grandfather was born here," says Lothair Teetor, president, Perfect Circle Company. This is the Indiana Hagerstown, with a population of 1,638. Grandfather's nativity no doubt was an important factor, but it would seem that Perfect Circle likes small towns. Of its five plants, the one in Toronto is the only one in a large city.

Bond Houser, Sr., chairman and president of the Troy Sunshade Company of Troy, O. reports:

"Our company was formed as a partnership in Troy 57 years ago, by two men who had lived in Troy for many years and regarded it as their home town. The company was incorporated 42 years ago by seven men who, also, had spent most of their lives here." Troy had 9,697 inhabitants in 1940.

Another big business that grew up in a little Ohio town is the American Pad and Textile Company of Greenfield, population 4,228. Charles F. Mains, president, says:

"This company was founded in 1881 by a young man of 20. Greenfield was his birthplace, and he had pride in the town and in helping to build it up."

Often it's as simple as that. Notwithstanding "the availability of fundamental necessities," many a going concern is where it is because long ago, some home town boy had a good idea and a lot of nerve (either of which is a "fundamental necessity"); and the present management, after weighing all the economic advantages to be gained by going somewhere else against the disadvantages of not moving, prefers to stay put.

Sometimes whole industries migrate for good reasons, as the cotton textile industry moved from New England to the cotton-growing South; the shoe industry from the Atlantic seaboard to the

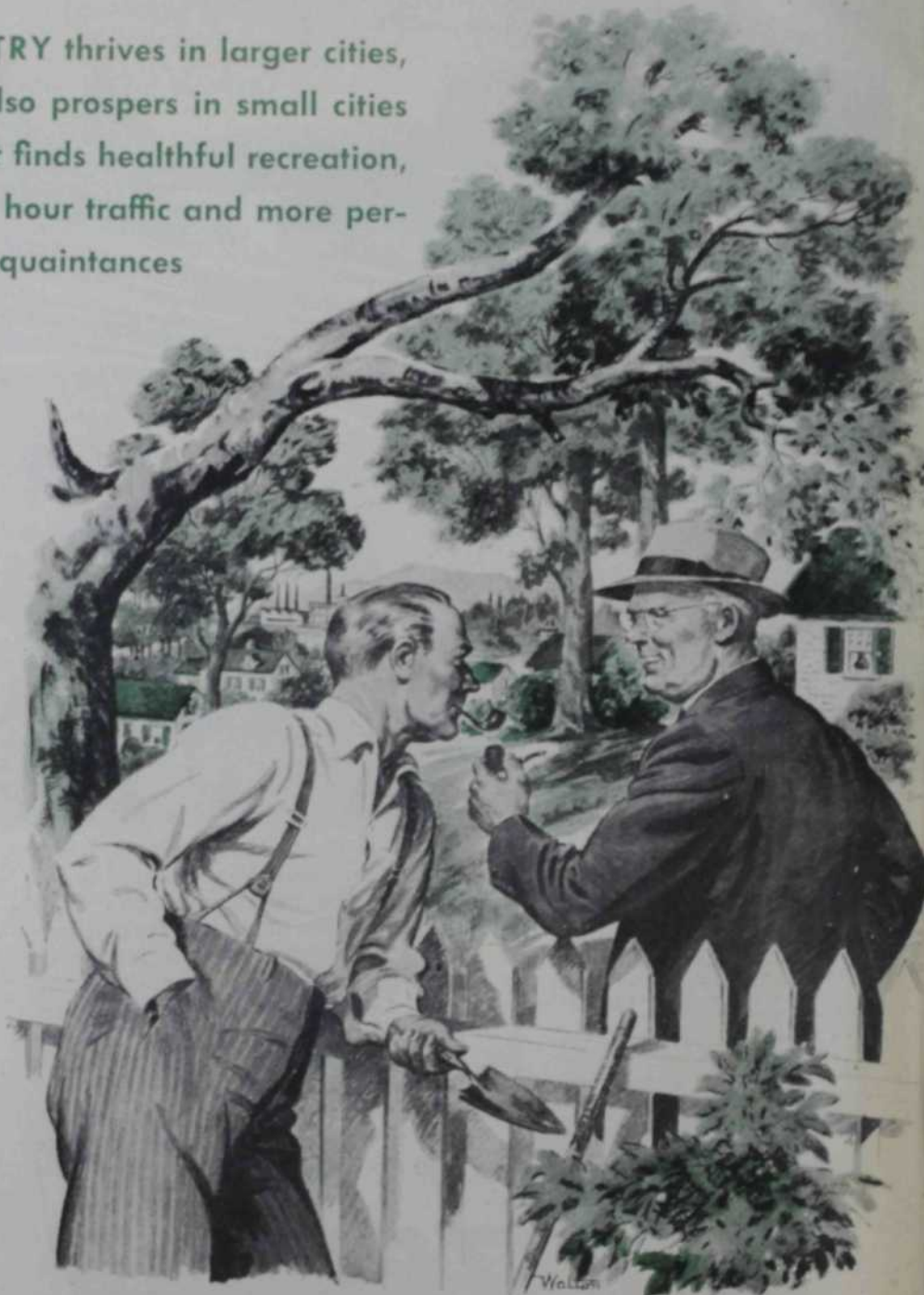
Middle West and back again; the makers of Kraft paper from the established mills of the North to the slash-pine area of the South.

Sometimes complete plants have moved across state lines or to a new region. Such moves are made to effect

savings. Competition, the will-to-survive, and changing conditions probably always will force some industries and some concerns to move or expand or decentralize for the sake of economies in production or distribution.

This knowledge that industry does

INDUSTRY thrives in larger cities, but it also prospers in small cities where it finds healthful recreation, no rush hour traffic and more personal acquaintances



In small towns workers are often home owners, interested in the community, and better citizens

When is
FIRE
 too
COLD?

FIRE was both a tool and a limitation for the ancients. With it they made things of tin and lead, silver and gold. But their fires were never hot enough for the sterner metals.

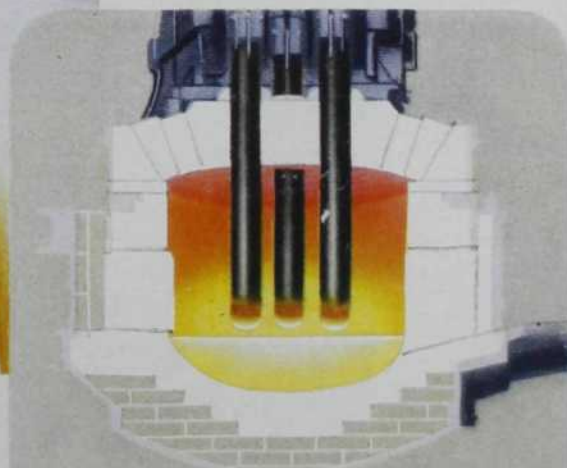
Man's progress through the ages has been accelerated each time he has learned to create and control a higher temperature.

With the electric arc came heat hotter than any fire. And, by means of carbon or graphite electrodes—developed by research of NATIONAL CARBON COMPANY, INC., a Unit of UCC—man put the electric arc to work in furnaces such as the one you see above.

Born in the terrific heat of the electric furnace are many of the alloy steels used in ships, trains, planes and other equipment, and also the ferro-alloys that give strength, toughness, hardness—or the quality of being stainless—to these steels. These materials—and the intense heat that produces them—are vitally necessary to American industrial progress.

Coming from the electric furnace—in addition to alloy steels and ferro-alloys—are phosphorus, abrasives, calcium carbide for acetylene used for welding and cutting, and many special alloys.

For further information write for booklet N-3, "The Story of the Carbon Arc" . . . there is no obligation.



Cross Section of an Electric Furnace

Electricity comes to the furnace on metal bars. It is carried into the furnace by carbon (or graphite) electrodes, which you see projecting down into a brick lined bowl. Carbon is used because, unlike metal, it will not melt.

You see carbon in many forms other than electrodes. Diamonds are pure carbon. Graphite, which is the "lead" in pencils, is carbon—and so are coke and charcoal. This material is the subject of unending research by the National Carbon Unit of UCC.

BUY UNITED STATES WAR BONDS AND STAMPS

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Principal Units in the United States and their Products

ALLOYS AND METALS—Electro Metallurgical Company, Haynes Stellite Company, United States Vanadium Corporation

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ELECTRODES, CARBONS & BATTERIES—National Carbon Company, Inc.

INDUSTRIAL GASES AND CARBIDE—The Linde Air Products Company, The Oxyweld Railroad Service Company, The Prest-O-Lite Company, Inc.

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as face powder
...for Levelcoat***

You have seen it . . . two printing jobs by the same printer: one perfect; the other poor. Why this difference? It may well be a difference in clay used in making the paper. For on the quality of the clay depends the opacity and ink receptivity of the sheet.

That's why Kimberly-Clark uses only carefully selected white and china clay found in limited quantities in Georgia, in the Carolinas and in England.

And even this choice clay has to pass rigorous inspection before a carload enters a Kimberly-Clark mill. Brightness, moisture content and acidity must measure up to rigid specifications. But most important is the severe test for *particle size* and *erosion*.

The particles must be so fine and grit-free that they might pass for face powder. This flour fineness is necessary to prevent wear on the cylinder and rollers of printing presses which in turn would make perfect printing impossible.

Here, then, is another example of Kimberly-Clark quality control. Another reason why Levelcoat Printing Papers give the same excellent results every time.



**KIMBERLY
CLARK**

CORPORATION
NEENAH, WISCONSIN



PAPER PACKS A WAR PUNCH—DON'T WASTE IT!

*Levelcoat** PRINTING PAPERS

* TRADE MARK

move and that manufacturers do expand has created keen rivalry between civic organizations of towns and cities for the industrial expansion of their particular community. In fact, this tug-of-war for more smokestacks and additional pay rolls has become so intense there is hardly a town in America without an industrial development committee of one kind or another whose duty is to sell outside industries on the community's natural or man-made advantages. Civic pride and progress seem to demand and welcome more factories. Few communities, large or small, have expressed a desire for less industry.

Factors affecting location

THE incentive which prompts the relocation or expansion of an industry or an organization springs from the favorable status of one or more of six fundamental factors: raw materials, labor, markets, transportation, power, and legislation.

Practically every city of 50,000 population or more is strong in at least three of these factors. But many large and progressive manufacturers are doing business on an international scale from small-town headquarters. How come? The "The 'Junket' Folks" of Little Falls, N. Y., population 10,163, answer:

"When it was necessary (for the Chr. Hansen's Laboratory, Inc.) to build a new factory for the production of food preparations in 1936, much consideration was given to moving to another locality, but we found we had too many roots and too many old employees who would not move along with us to a location which, in many respects, might be more favorable. There is considerable disadvantage to our executives not being near a large city, but this is offset by the gradual increase in the speed and future changes in the method of transportation. Even now an airfield is being considered."

Thinking somewhat along the same line, the Minnesota Valley Canning Company whose big green giant is a familiar trade-mark in food stores reports:

"Our organization grew up from its start in Le Sueur (Minnesota, pop. 2,303) back in 1903. It was an organization of local townspeople and farmers who sponsored a small canning plant.

"The present managers of the company have lived in Le Sueur from 15 to 25 years, and some of them have lived here all their lives.

"We have always felt there were a number of advantages to a canning company having its headquarters in a small community. In the first place, we are right on the ground, close to the soil, and although our canning operations now cover five states and 16 plants, watching the crop progress and mature in at least one community keeps us closer to the source of the product we sell.

"There is a spirit prevalent in a small town organization that we do not believe can be duplicated in any large city



"THE LARGEST OF MANY EXCELLENT BANKS IN THE NORTHWEST"

Statement of Condition December 30, 1944

RESOURCES	Totals
Cash and Due from Banks . . .	\$134,881,122.67
United States Government Securities	
Direct and Fully Guaranteed . . .	370,415,076.97
State, Municipal and Other	
Public Securities	29,813,645.69
Other Bonds and Securities . . .	2,348,106.02
	<u>\$537,457,951.35</u>
Loans and Discounts	92,918,738.84
Federal Reserve Bank Stock	484,500.00
Bank Buildings, Vaults, Furniture and Fixtures	1,831,697.06
Interest Earned Not Received	1,129,806.89
Customers' Liability Under Letters of Credit and	
Acceptances	2,501,470.60
TOTAL	\$636,324,164.74

LIABILITIES	
Capital Stock	\$ 10,000,000.00
Surplus	6,150,000.00
Undivided Profits	3,244,836.91
Reserves for Contingencies	3,017,485.71
	<u>\$ 22,412,322.62</u>
Reserves for Interest, Taxes, etc.	2,040,786.27
Discount Collected Not Earned	143,546.23
Letters of Credit and Acceptances	2,501,470.60
Deposits	609,226,039.02
TOTAL	\$636,324,164.74

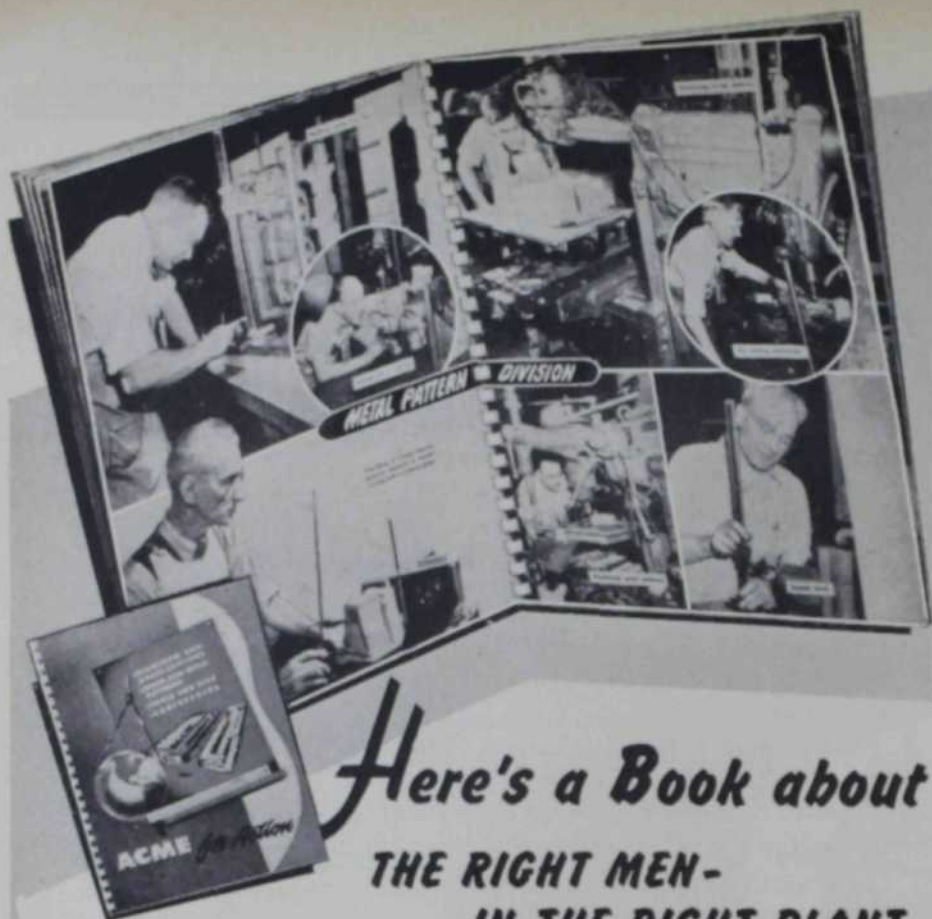
34 strategically located Banking Offices
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Member Federal Reserve
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Here's a Book about THE RIGHT MEN- IN THE RIGHT PLANT- WITH THE RIGHT EQUIPMENT- and the Right Answers for YOU!

TRAINED, experienced, resourceful production men—a spacious, well-lighted, thoroughly modern plant—up-to-the-minute equipment—that's the Acme setup and it goes far toward explaining why Acme does a superior job.

We're proud of Acme people, Acme plants, Acme equipment, and we've told you about them in a new book you'll enjoy reading, called *Acme for Action*. Brief, factual, illustrated with some 150 photographs, this book will really acquaint you with the men who make Acme products and the place where those products are turned out.

Whether you need Acme Aluminum Alloy Permanent Mold castings—or dies, jigs, patterns—special tools for new or unusual jobs—or general engineering or production advice and suggestions—Acme men can find the right answer to your problem. Write today for *Acme for Action*, and your copy will be promptly forwarded, with no cost or obligation to you.

ACME

Aluminum Alloys, Inc.

Formerly Acme Pattern & Tool Co., Inc.

DAYTON 3, OHIO

PATTERNS • TOOLS • ALUMINUM CASTINGS • ENGINEERING

group. It comes from living closely together and from knowing each other well. Social activities in a small community include everyone from the president of the company to the newest stenographer, which condition could not be duplicated outside."

Beech-Nut Packing Company has this to say about its place in Canajoharie, N. Y., a town of 2,577.

"Why should a company part from its birthplace . . . where many members of the management were born and brought up, leaving an empty plant where . . . it has built gradually and firmly?"

"In general, labor conditions are more pleasant in the small town than in a larger community. We have, in Canajoharie, comfortable living accommodations, pleasant surroundings, and good railroad and highway, all of which are important in our continued operations."

Reasons for moving

AND what are the inducements which make a prosperous corporation move to a small community—all in spite of the apparent, greater advantages offered by the larger cities? Let's hear what tempted the Life Savers Corporation to move to Port Chester, N. Y. (pop. 23,073):

"One reason for moving from New York City to our present location, back in 1920, was to get out of a congested factory area which was none too good from the viewpoint of personnel.

"Another was to get in a labor market where we had an opportunity to employ a better class of help.

"We located in Port Chester rather than some other spot because it is close to the New York market and because the owners resided in Greenwich and Rye, which are only two miles from the factory and office.

"We do have a better class of help here. A fair number of our employees live in private detached houses with breathing space, only five to ten minutes away by car.

"I don't know whether employees in a small town appreciate what it means to live near their work, and near shopping centers. I do know workers, however, who quit jobs paying more money in New York City because transportation costs ate up the difference, or the travel time (one hour) was irksome."

Among fifty-odd large corporations with small town headquarters, only six officials mentioned the lack of travel facilities for executives or the scarcity of technical help and services. Almost all mentioned such definite advantages as:

1. The impersonal contacts of the city don't exist in the small town. Neighbors, grocer, doctor, butcher and banker are personal acquaintances of the people in the plant as well as the executives. It is characteristic of the small town person to feel he counts in his community.

2. Small towns are close to nature. Healthful recreation for workers and their families is easy to find and easy

(Continued on page 69)

**"We particularly appreciate
BURROUGHS DEPENDABILITY
today, when mechanical service
is so very important"**

Burroughs' ability to maintain its high service standards during these trying war years didn't just happen! Years ago, Burroughs established a definite service* policy in recognition of the fact that any mechanical product can be no better than the service provided for it. Today's experienced, highly-trained service organization is the natural result of this farsighted policy of careful planning, constant study, continuous training and close supervision. It is this typical Burroughs thoroughness which makes it possible to help more and more users keep their precious Burroughs machines in action today.



Burroughs

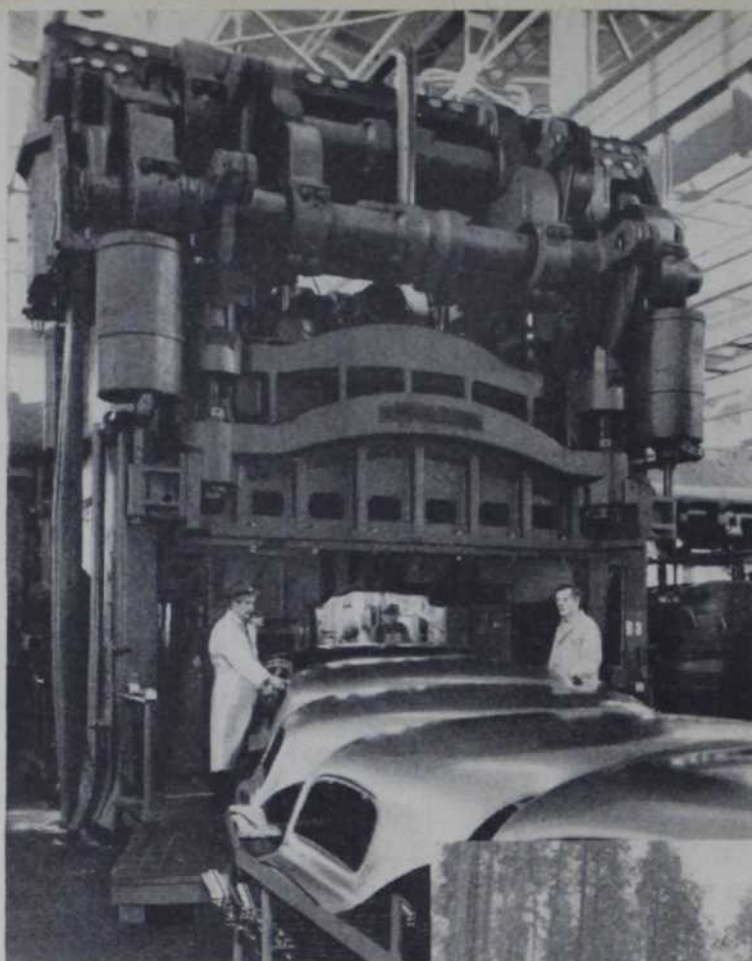
**IN MACHINES
IN COUNSEL
IN SERVICE**

Burroughs systems and installation men have been constantly helping business machine users to make the fullest use of the equipment they now own . . . helping them to adapt their present machines to new conditions. Reference libraries containing up-to-the-minute information on machine accounting methods and procedures are maintained in all Burroughs offices. For help in getting the fullest use from your present Burroughs machines, call the local Burroughs office, or write Burroughs Adding Machine Company, Detroit 32, Michigan.

How Russia Trades with Us

By JUNIUS B. WOOD

WHEN one firm has a monopoly on everything a nation buys and sells, there is both a problem and an opportunity for the American business man



From us, Russia will need tools and heavy machinery



... and Russia will have lumber, furs, chrome, gold, asbestos and caviar to sell

THOUGH separated by generations and oceans, the trading post of Pioneer America which handled anything from a coonskin to a barrel of molasses differed only in size from what today is the world's largest store. A sunflower seed or 1,000,000 tons of oil are on its "shelves." It can supply a painting by an old master or a new locomotive. More than that it buys as much as it sells with an annual balance sheet in billions of dollars.

This colossal dealer in general merchandise is the Union of Soviet Socialist Republics represented here by Amtorg Trading Corporation. The name, Amtorg, is an amputation of Amerikanski Torgovoye Obshchestvo, or American Trading Company. It is unique among business houses—a split personality. As a going concern whose transactions range from chicken feed to millions, it is big business. In that it is American. In operations it is Russian even to a Soviet school for its children.

The American business man is interested in how he can trade with a concern which represents a nation. He sees no advertisements that Amtorg has a shipload of coal to sell. He hears no radio advice to run to the drugstore for a nostrum which Amtorg has produced

and he is not informed when Amtorg is in the market for a blooded bull or \$1,000,000 worth of machinery. Many American firms have had experience, almost always profitable, but more do not know the lines and kinks of trade with Amtorg.

When the war ends, the Soviet Union will be back in commercial business on a larger scale than before. In fact, it is

already starting, and the American business man can decide whether he wants a part of that trade.

A part of Russia

AMTORG is a miniature of Russia set down in the United States, specifically at 210 Madison Avenue, New York City. Its employees are Russians and—as Americans would be in a foreign land—true to their country's customs and doctrines. That is one reason Amtorg has been a puzzle to so many. Though legally a business concern, controversies have ebbed and flowed through its entire existence over its influence on the political and social life of the U. S. and the possibility that it is a dangerous propaganda center.

Around its office they tell the story of an inquiry sent to American insurance companies for rates on ocean cargoes. A big life insurance company included in the list duly replied that it did not write marine insurance, and added that it would not write life insurance on Soviet citizens because their life tenure was too uncertain.

Those of Amtorg's officials who have returned to Russia continue in circulation. Its first chairman, Isiah J. Hoorgin, is the only one of record whose career ended abruptly. That happened at a New Jersey summer resort. He could neither balance himself in a canoe nor swim.

In our Department of Justice, Amtorg



Sweet potatoes make sweet music

THE news about sweet potatoes—the kind you dig out of the ground—is music to the ears of Southern farmers...and industrialists.

Because science is finding new uses for this old stand-by farm crop...breakfast food and ice cream, starch and alcohol, malt and livestock feed...

Southern agriculture...like Southern industry...is marching to a faster tempo these days. Producing more and better products. And shipping them to

market economically...by the dependable Southern Railway System.

After victory, the whole Southland . . . business, industry, agriculture and the Southern will join in a mighty chorus, to sing a song of progress and prosperity.

Look ahead—look South!

Ernest E. Harris
President



SOUTHERN RAILWAY SYSTEM

The Southern Serves the South

has a clean slate. To our Department of Commerce, Amtorg is solely an American business concern, unaffected by the political opinions of its personnel.

So much for Amtorg as a political influence.

Amtorg is an American corporation, chartered in New York State, May 27, 1924. Its \$1,000,000 capital stock was increased to \$1,500,000, Sept. 1, 1925, and to \$3,000,000, Oct. 1, 1928. Practically all of the 30,000 shares are held in escrow in Moscow by the Bank for Foreign Trade under various names for the Peoples Commissariat of Foreign Trade. John G. Ohsol or a representative of the law firm of Simpson, Thatcher & Bartlett have satisfied the statutory requirement of one American director. In other respects, Amtorg is Russian.

Naturally American courts have gone beyond curbstone opinions of Amtorg's dual nationality. A court opinion, when the Treasury Department in 1930 accused the corporation of being an agent of the Soviet Government to dump matches on the American market, ruled that it is "under control of the Soviet Government but a citizen of New York."

By its license from the Peoples Commissariat of Foreign Trade, Amtorg is allowed 2½ per cent commission on its transactions but must remit 50 per cent

of net receipts up to \$100,000, and 60 per cent after that, to the Commissariat in Moscow.

Vigilant income tax collectors hopped on this. The court ruled that the remittance was not a part of profits but a license fee for the privilege of doing business in the Soviet Union. Amtorg's Moscow office, as Russian as the Kremlin, is technically a branch of the New York corporation which gives it the distinction of being the largest, if not the only, foreign concern allowed to carry on a merchandising business in Russia.

A means of opening trade

BEFORE Amtorg, efforts of the Soviet Government to revive the once flourishing Russian trade with the United States met many obstacles. Since this country had not recognized the new Government, Russia could not establish an official trade mission. A commercial agency without diplomatic standing might be involved in litigation over some \$800,000,000 in claims against Old Russia.

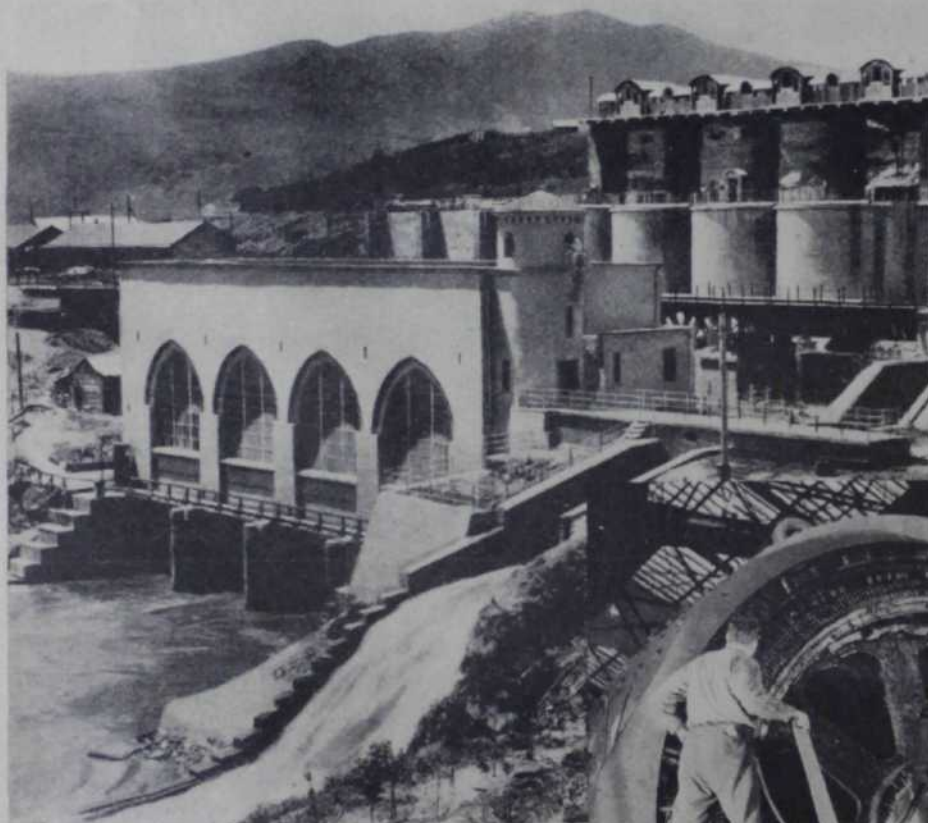
The hysteria may be amusing today but it was serious then. On March 10, 1919, our State Department received a communication from Ludwig C. A. K. Martens enclosing his appointment by

Georges Chicherin, then Peoples Commissar for Foreign Affairs, as the Commissariat's representative to open commercial relations with the United States. Mr. Martens, once an exile with Lenin in Switzerland, had reached the United States in 1916, writing for *Novy Mir* in New York as did Trotsky. Still hopeful at that time of realizing on the supplies given the Kerensky Government, two American divisions were shivering in Russia, and Washington still recognized Bakhmetev, appointed by the late czar, as head of the embassy in Washington. The Martens letter still rests in the department's "to be answered" file.

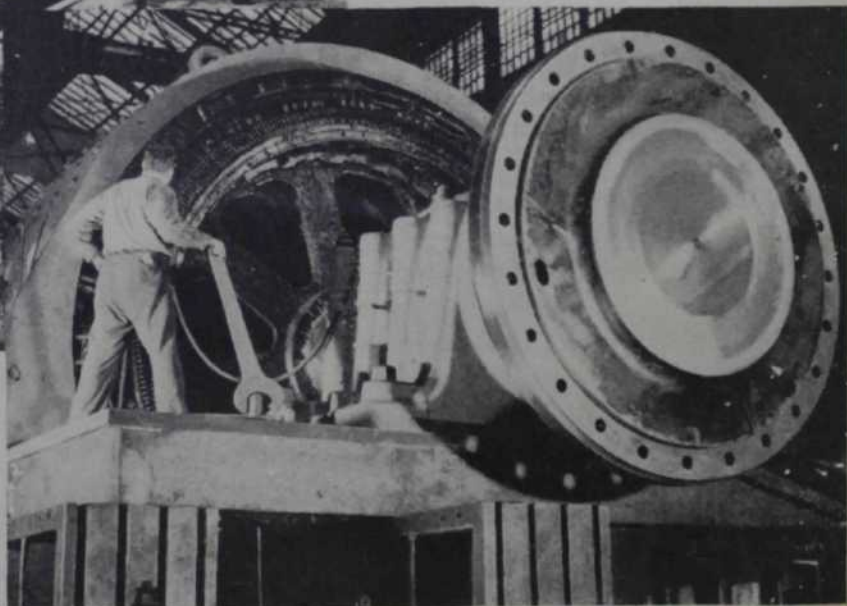
Martens went ahead buying machinery, tools and pipe and taking orders for Russian furs, lumber, flax and minerals. One hitch, handicapping to business, was that the State Department would not approve the transfer of \$200,000,000 in gold or issue export licenses. In addition to his role of big business man, Martens also made speeches. The late A. Mitchell Palmer was leading the country's greatest witch hunt, the Albany legislature had expelled five Socialist members, and the New York Union League Club—fearful that Martens would overthrow the Government—led a squad of state police and private detectives in a raid on his office in New York.

Thus the promising Soviet business ended after three months. Attorney General Palmer, by that time deporting Americans as well as aliens, booked Martens for the "Soviet Ark," as the public had dubbed it. The Department of Commerce held up the deportation order but Commissar Chicherin called him home, canceling \$100,000,000 of orders in the United States with a disquieting comment that they were only an opener for \$1,000,000,000. Martens sailed Jan. 21, 1921, got out of business and at last report, in 1944, was writing a Soviet encyclopedia.

Though diplomatic relations were nonexistent, political relations touchy and the Soviet Union largely viewed as



Much of Russia's prewar industrial equipment, which was made in America, has been destroyed by the enemy and she looks to us for replacements





A Slight Error of \$100,000

A LEADING rubber company was using a large sheet for its tire factory orders. It carried complete data, formulae for batch mixing, production instructions, etc. Numerous copies of the order were required.

Illegibility of words and figures in some of the copies caused mistakes—a 3 would be mistaken for a 5—a 6 for an 8—batch mixes were spoiled—materials lost—time wasted.

Investigation disclosed that misreading of figures due to faint impression, blurred reproduction or misalignment was costing at least \$100,000 a year.

New Duplicating Methods Stopped Losses

The company installed a Multilith duplicator using a Systemat as the reproducing master sheet for the large factory order form. The Systemat comes to them with the form itself already on it in reproducing ink, and the production specifications are typed or written in directly on the Systemat. Both are reproduced in a single run in any desired number of copies. Each copy is in perfect alignment, each accurate

and clear—last copy as legible as the first. Errors have been eliminated, losses stopped.

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Multigraph

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SIMPLIFIED BUSINESS METHODS

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a weird land of wolves, romance and intrigue, venturesome American business went ahead on its own. Interests associated with W. Averill Harriman, present American Ambassador in Moscow, were prominent. When the Soviet government organized Derutra (*Deutsche Russische Transport Gesellschaft*) as its sole forwarding agent, half its stock was held by the Government and half by the Harriman group and the Hamburg-American line.

In 1925, the Harriman interests got a concession for the manganese properties at Chiaturi in Stalin's own Georgia republic. Moscow bought it back later. The next year, the same interests proposed a \$35,000,000 loan to finance German exports to Russia.

New type of trade

AS A practical approach to meeting the difficulties of carrying on trade between the Soviet Union and the U. S., Amtorg, an American corporation, was set up. A similar method was already working in England with *Arcos* and later in South America with *Yuzhamtorg*.

Amtorg put business with the United States on a stable basis. Including 1941, Soviet purchases in this country have been more than \$1,056,000,000, compared to sales of \$324,000,000, a 13 to four trade balance in favor of the United States. Over the years, annual purchases averaged \$58,700,000, and sales, \$18,000,000.

Purchases reached \$114,000,000 in 1930, and since the low year of 1933—the only one where the trade balance was unfavorable to the United States—climbed close to the same high figure in 1941. Amtorg's office expenses have been \$800,000 in a single year.

Through the years, Amtorg has reflected changes in the Soviet Union and in the United States. It has cleared its skirts of activities which are closer to public opinion than to commerce and has withdrawn, except in a brokerage capacity, from negotiations between American firms and certain Soviet government combines permitted in export and import trade. The greatest change in Amtorg's operations followed the signing of the lend-lease agreement, June 11, 1942, and the appearance of the "Soviet Government Purchasing Commission in the U.S.A.," four months later.

Some of the firms which follow Amtorg's corporate form and Soviet allegiance are the result of that corporation's self purges. Others always have been independent. All are in New York City, a roster of activities which reflect Moscow, but are not handled by Amtorg.

Sovphoto Agency has a monopoly on the distribution of photographs from

the Soviet Union. Sovkino, now Artkino, enjoys a similar monopoly of Russian movies or purchases of American films. Am-Rus Music Agency, Inc., replaced the Am-Rus Music Corporation and has granted a contract with the Leeds Music Corporation for handling the rental library of Soviet music for performance here and the publication of Am-Rus editions of certain Soviet music.

Amtorg escaped the biggest headache when its book business was transferred to Amkniga, later Mezkniga, then Bookniga, and now Four Continent Book Corporation. "Book-Kniga," the same word in two languages, was charged with failing to register as an agent of a foreign government, its three top officials receiving fines and prison sentences.

The 20 odd export or import combines in the Soviet Union are not independent of Amtorg in the United States. For instance, Stankimport, a combine for specialized machine tools, might

being the Government. The American business man's first and last contact, regardless of any intermediate negotiations, is through Amtorg.

In its middleman role, Amtorg is more active in advertising American products to its own people than in introducing Soviet products to the United States. American business competes for consumers whereas government business—and Amtorg's mentality is Russian though its body is American—expects the consumer to look for the merchandise.

American firms advertise

INREKLAMA solicits advertising from American firms for Soviet publications and for Amtorg's monthly, *American Engineering*, printed in the United States in Russian for circulation in the Soviet Union. Its particular pet is *Catalogue of American Engineering and Industry*, also in Russian, with 5,000 circulation in the Soviet Union.

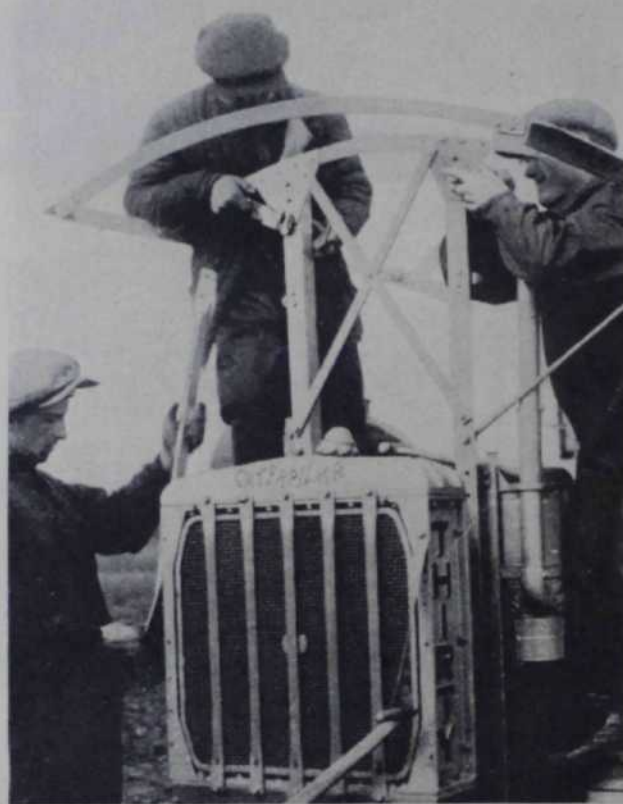
Amtorg has not advertised in the United States in seven years, and has promoted only one exhibition of Soviet goods. In contrast, it urges American producers to exhibit in Moscow.

So what will the Soviet Union buy in the United States and what does it have to sell, the latter the important essential if it does not expect to do business on American credits and loans?

Every indication is that it will be a greater market than ever before for American business. Big orders already are being placed: with General Electric and Newport News Shipbuilding Company for nine turbogenerators to replace and increase the capacity of those destroyed at Dnieprostroi; with du Pont for synthetic rubber plants; with International Telephone & Telegraph for a new nation-wide communications installation and with many concerns for machinery, including mining. The latter brought a protest from John L. Lewis' United Mine Workers that no machinery would be available for American mines if all the orders were accepted.

A tentative order from Moscow, more potent with opposition, is for ships—reports saying that Russia will specify that only C.I.O. union members work on their construction. More ships may not be built as 60 already have been tentatively allocated to fly the flag of the hammer and sickle while title remains with our Government.

Moscow was highly indignant when I was there, because the U.S. banned imports produced by prison labor. Most Soviet prisoners were at forced labor. Possibly Moscow believes that, if the United States could decide who should not work on its imports, the Soviet



Russia will raise all her own food but American tractors will help do the job

send representatives to the United States to select what it wanted but Amtorg would handle the delivery and pay the American manufacturer. In the same way, if Exportkhleb, a combine which handles food and agricultural products, made a sale to an American firm, Amtorg would deliver the order and forward payment to the combine in the Soviet Union.

Except for the business of the big combines, Amtorg is a middleman between American consumers or producers and those in the Soviet Union, the latter

Another billion dollar highway program



IN thinking about work after the war, don't overlook the 230,000 miles of steel "highways" which the railroads have built and maintain at their own expense. These "highways" provide jobs for more than a quarter of a million men working on construction and maintenance of tracks and roadway — jobs for more than a million other railroad workers — besides still other thousands in the mines, the mills and the forests where roadway materials and supplies are produced.

More than that—the railroads pay real taxes on these "highways," not for their own special benefit, but for the support of schools and other general services, including public highways and streets.

After the last war, between 1920 and 1930, the rail-

roads spent more than four billion dollars for improvements on these "highways," and in addition more than three-and-a-half billion dollars for betterments in equipment. After this war, a similar program will be required.

So there's another highway program which could make a lot of postwar jobs, and which needs no more than a public policy of treating all forms of commercial transportation alike — letting each one pay its own way, which includes the payment of the general taxes upon which governmental services depend.



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Two Ways to Solve Your Product Marking Problem



Right now you're up to your ears in war production. But you probably are still *thinking* about a new product to be made when peace comes. You're also probably thinking about marketing that product . . . how to trademark it, package it or how to get your story across at the point of sale, among other things.

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Please send me without obligation, booklet "If You Could Only Be at Every Point of Sale."

Name
Firm
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City Zone State

Union could specify who should work on what it buys.

The half dozen big contracts mentioned above are only high spots in what the Soviet Union will want from the American market. E. C. Ropes, chief of the Russian division of our Bureau of Foreign and Domestic Commerce, foresees a demand for \$1,000,000,000 of American supplies in the years immediately after the war, in every line of production except food.

American business men who have traded with the Soviet Union know what it will want after the war. American engineers, specialists and equipment helped the country toward its present industrialization. It now must replace machinery that has worn out or been destroyed. Russia hopes to manufacture its own consumer goods but the demand is too urgent and much must be imported in addition to factory equipment, from railroad rolling stock to lighter machinery.

Soviet has much to sell

WHAT the Soviet Union has to sell to balance its import ledger is not as well known. Furs head the list. Seven American companies keep fur buyers in Moscow. An American firm was a steady customer for anthracite coal, another for prepared fish, another for lumber. A shipload of matches and cigarettes would find a ready market. Manganese, asbestos, chrome, gold, platinum and other minerals, radium, caviar, sausage casings, linens, nuts and mushrooms are familiar.

Those are only a few of the things American business may want from the Soviet Union. Buying may be as profitable as selling. Mr. Ropes has listed more than 200 commodities, large and small, which have been imported into the United States from the Soviet Union in 15 years. There may be an American market for many more.

Business men who are interested should write for the list. After that they can do business with Amtorg. Amtorg may be too Russian to ballyhoo what it has to sell but, if a prospective customer knows what he wants, it will try to get it and if the American producer has something to sell, it will give him an opportunity to bid.

At present, Amtorg's business is largely absorbed by the Soviet Purchasing Commission. Amtorg's former president, K. I. Lukashev, and many employees were transferred to the commission. M. M. Gousev succeeded him. The commission is a war creation, its staff of 1,500 with their families overflowing the big, eight-story former Yorkshire Apartments in Washington.

Russia's birthrate is not declining and the commission's private kindergarten has 60 growing Bolsheviks. The commission does a one-way business—nothing to sell. It specifies what goods are wanted for military needs and our Army, Navy or Treasury department makes the

(Continued on page 75)

the words

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may suggest this...



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1898 Spanish-American War	1851—San Francisco	1843
1917 World War I	1866—Portland, Me.	1857
1941 World War 2	1871—Chicago	1873
	1872—Boston	1893
	1877—St. John, N. B.	1907
	1889—Seattle; Spokane	1921
	1901—Jacksonville, Fla.	1929
	1904—Baltimore	
	1906—San Francisco	
	1908—Chelsea	
	1914—Salem	
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Spite Fences on State Lines

By DONN LAYNE



BACK in the days of our great-great-grandfathers, three New England states closed their ports to outside shipping. This made Connecticut mad. She threw her ports wide open and imposed restrictions on imports from Massachusetts. Meanwhile New York City merchants who saw thousands of dollars flowing out of the city in payment for fuel from Connecticut, and for butter, cheese, chickens and vegetables from New Jersey, imposed high clearance fees and duties on these imported items.

New Jersey retaliated by taxing New York's Sandy Hook lighthouse \$1,800 a year for the use of a small plot of sand. Connecticut business men, meeting at New London, signed an agreement (\$250 minimum fine for the first offense) to carry on no commercial intercourse with New York City. Soon these communities were trading nothing but name-calling, which soon spread to other states.

Vermont and New Hampshire started a fight over the sovereignty of a number of Connecticut river towns—an armed conflict which soon brought in New York and lined threatened frontiers with trigger-happy troops.

Business got so exciting that a rifle ball was almost to be expected with every other commercial transaction.

FOR health and safety, states must regulate their trade with other states. But sometimes barriers are set up to provide an undue advantage or to get even with someone

Such trade barriers and business bickerings between the states were largely instrumental in drawing together the leaders of that period to frame a federal constitution and to organize a strong central government. Only 158 years ago, in a letter urging a Constitutional Convention, James Madison wrote:

"The practice of many states in restricting the commercial intercourse with other states and putting their production and manufactures on the same footing with those of foreign nations, though not contrary to the Federal Articles, is certainly adverse to the spirit of the union, and tends to beget retaliating regulations, not less expensive and vexatious to themselves than they are destructive of the general harmony."

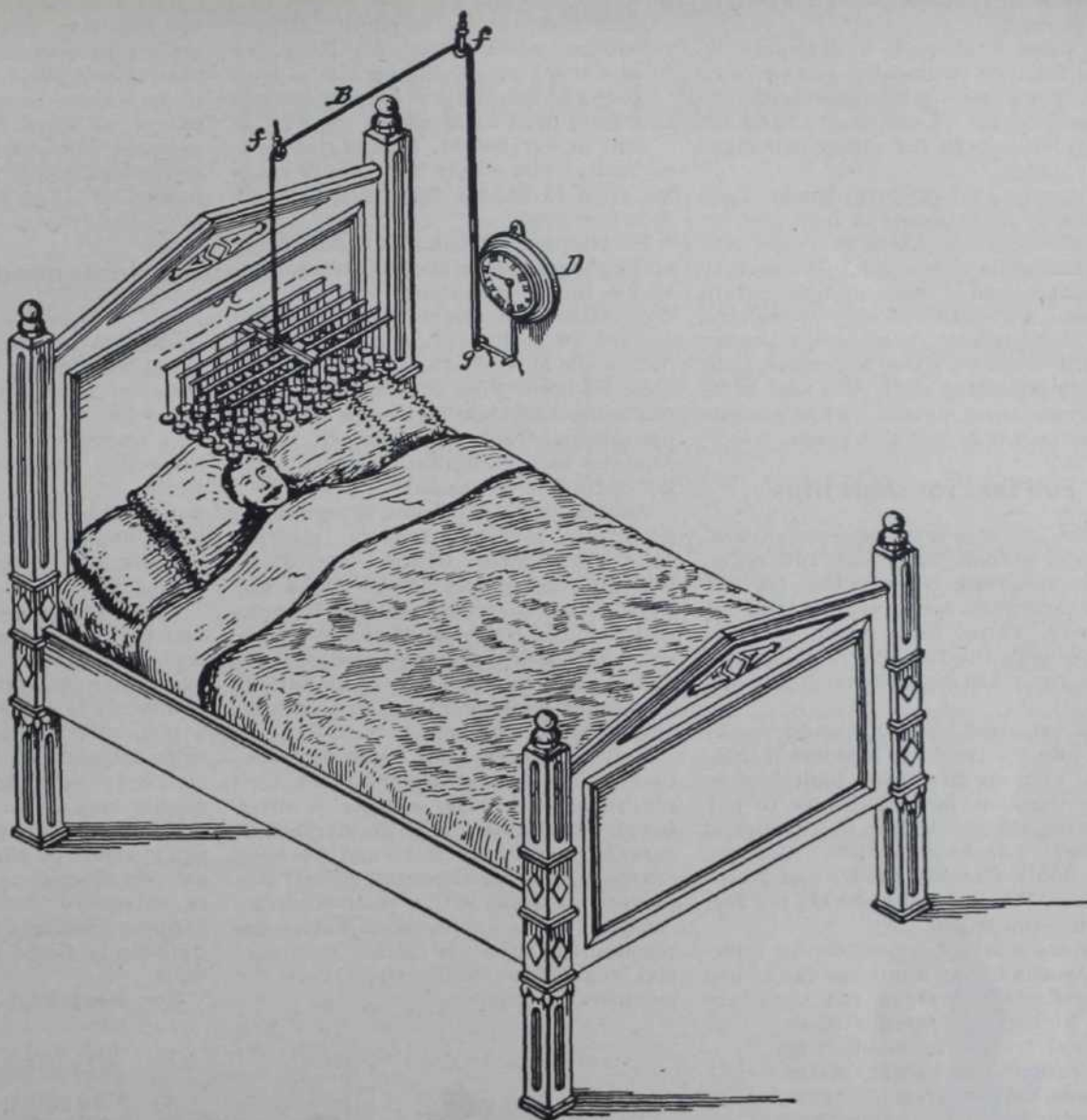
Thus it came about that our Constitution included these words:

"... no state shall, without the consent of Congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary for

executing its inspection laws; and the net produce of all duties and imposts, laid by any state on imports or exports, shall be for the use of the Treasury of the United States; and all such laws shall be subject to the revision and control of the Congress. No state shall, without the consent of Congress, lay any duty of tonnage. . . ."

After the Constitution was ratified, the bickering and trade barriers faded away and our nation began to prosper as no other country has ever done.

Today many persons fear that restrictive barriers are being revived. They point to 3,000 state laws and regulations that govern and restrict interstate commerce. Most of these laws were intended as legitimate exercises of the enacting state to protect the safety, health and welfare of its citizens, but the line where propriety leaves off and selfishness takes over is so hazy that even well intended statutes frequently have hampering results on commerce. These inspire neighboring states to repay in



Device for Waking Persons from Sleep. U. S. Pat. No. 236,265, granted 1882. Patent description supplied upon request.

How to wake up . . . the hard way

Just "set" the gadget above for, say, seven o'clock. And next morning it gets you out of bed . . . by dropping down and banging you on the head!

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One short form takes care of *five* operations! Because the system is so simple, you can complete the payroll and have checks in the employees' hands in a remarkably short time. And the Comptometer method is flexible. Every machine works a full week. There are no peak loads on one day.

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Adding-Calculating Machines and Methods

kind with laws that are frankly punitive.

Carried far enough such a program could eventually Balkanize the United States into a collection of small principalities with customs officials at every port of entry.

As proof that such a day may be closer than we realize, the custom is to point to the regulations governing interstate trucks. No one denies the need of regulation both for safety and highway upkeep.

Obviously, out-of-state trucks may reasonably be expected to help pay for the upkeep of the roads they use. But the question is how much? The answer is various—and is influenced by certain factors. A small, thickly populated state, for instance, has more revenues to build heavier, wider highways than a thinly populated state with vast acreage which must stretch highway funds over hundreds of miles of roads.

Full fees for short trips

IN some 19 states every interstate truck, wherever owned, must pay full registration fees and other taxes. (A few minor exceptions for occasional trips are allowed.) These fees, which increase sharply with the tonnage of the truck, range from \$30 to \$400 on a five-ton truck.

If a returned veteran should decide to go into the trucking business in Alabama, and his first load took him to North Carolina, he would have to pay (ignoring the extra fees if a trailer is involved) Alabama, \$400; Georgia, \$400; South Carolina, \$300; and North Carolina, \$11—a total of \$1,111 for fees on a five-ton truck.

In some states it is possible for interstate trucks to pay a mileage tax in lieu of registration charges, but these are often higher for "foreign" than for local trucks. In addition to registration fees, eight states have enacted gross receipts taxes for motor carriers ranging from one-half of one per cent of gross receipts in Montana to six per cent in North Carolina. In addition to other costs, 15 states also levy *ad valorem*, caravan, specific ownership, ton-mile, excise, franchise, or surtax taxes—to be paid by all commercial trucks passing through.

Having paid the fees the trucker isn't done.

If he starts in Rhode Island, he is permitted a total weight of 52,800 pounds. At the Connecticut line the maximum drops to 45,000. At the New York border it jumps to 50,000. New Jersey permits 60,000 pounds; Maryland, 52,800; Virginia, 40,000; and Texas 38,000 pounds. In the 48 states there are 12 different weight limits for one type of truck.

To confound the trucker still more, there are maximum dimensions for width, height and length of motor vehicles—not to

mention the dozen or more truck-lighting requirements calling for minimum and maximum numbers of amber, green, yellow, white and red lights to be placed in front, top, side and rear of vehicles.

Most states agree on eight feet as a maximum width. Even so, Kentucky fined a truck driver \$27 because a knot in the rope holding the cargo exceeded the width limit by an inch.

But, as for height, four states have no limit, while others have limits ranging from 11 to 14½ feet, with 12½ the most common.

Restrictions on (nine of them) overall length vary between the states. Kentucky limits maximum length to 35 feet; California and four other states specify 60 feet; most states allow 45 feet; while Maryland and Massachusetts have no limit. Four states won't allow full trailers on their highways, although permitting tractor-semitrailers, while 11 states have no limitation on the number of trailers to be used.

Adding to the confusion is legislation governing mufflers, fenders, steering gear, windshield wipers, defrosters, tool kits, fire extinguishers, locks and keys, bumpers, windshields, fuel tanks and required lettering of specified size, color and position on the truck.

Buses also face a variety of limitations governing passenger capacity, weight, length, lights and special fees.

Railroads, even after years of operation are not exempt. Rolling stock simply passing through a state is often taxed. Four states limit the number of cars on a freight train, and 14 have "extra man" laws requiring special employees on trains within their borders.

Cities, towns and counties have complicated the situation further with special regulations and extra taxes for commercial vehicles.



"Our household maintenance class met here today. I want you to do a few things after dinner"

Conceding that all these laws serve a worthy local purpose, it is still obvious that a non-uniformity, that makes a truck which is legal in one state illegal almost everywhere else, is an unfortunate handicap to commerce. Although always present, such a handicap may pass unnoticed—hence unrepaired—until its effects become dramatically apparent, as when South Carolina peach growers suffered large losses because state laws, unfavorable to out-of-state trucks, made it extremely difficult to move the crop to market.

Plants bonded for health

STATE protection of health frequently leads to involvements almost as complicated as those in transportation. No state, of course, wants to import diseased livestock or plants. Still, in addition to registration, state license and inspection fees range from \$1 to \$500, while, in some places, out-of-state nurserymen must post bonds from \$500 to \$5,000, name the principal involved and disclose the terms of sale of each transaction.

That wide range of payments and the fact that some states get along without registration implies that readjustment everywhere is worth considering, and it is difficult to see what end is gained by a law, such as one state has, that all eggs shipped in must be labelled "foreign eggs" when domestic eggs of equal quality may be labelled "fresh eggs."

Fair regulations, of course, encourage business by eliminating unfair competition. Sometimes they are necessary to safeguard domestic production as happened not long ago when an eastern community found itself almost without milk.

For some time another community which had overproduction of milk had been shipping its surplus, at low price, into the eastern region. Discouraged local producers, unable to compete, gradually reduced their herds. Then the neighboring surplus disappeared.

The result was a seasonal glut at ruinous prices for part of the year, and a milk shortage later to the detriment of the consuming area.

To prevent such a situation, most state "milk sheds" require extra license fees and taxes on imported milk and insist that any milk that leaks through the charges must be "pure." That is a natural precaution—but few states seem to have faith in their neighbors' definition of "purity."

Two states require that all milk sold within their borders be pasteurized there. And to be sure that milk is produced and kept under conditions specified by the health department of the district where it is to be sold, many detailed regulations have been put into effect. No matter how pure, milk cannot enter the

A few of the manufacturers who profit

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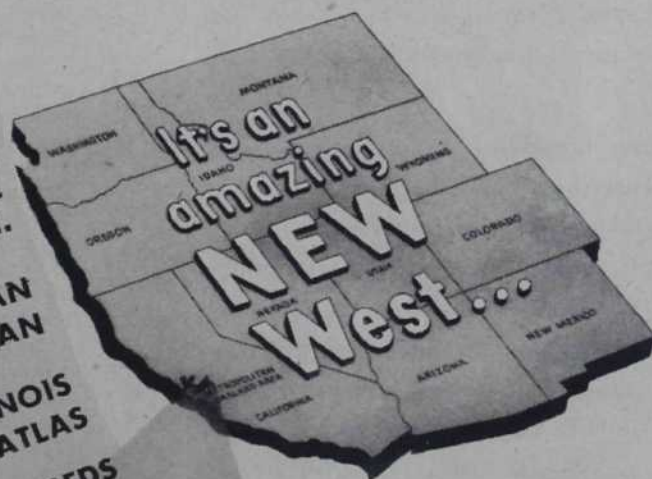
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*Pyramids and Temples of Gizeh, by W. M. F. Petrie

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Nation's Capital markets, for instance, unless it has come from cows that have been "wiped clean, teat by teat, with a hemstitched linen towel of specified dimensions used by a man sitting on a three-legged stool in a barn that has a smooth ceiling."

Milk products such as cheese, ice cream and canned milk are also subjected to many restraints and regulations, and, as with most laws dealing with interstate commerce, the lack of uniformity is appalling.

However, the milk product around which the greatest storm now centers is butter. Naturally a person who buys butter wants protection against substitutes. The laws which give him that protection, and the arguments now going on about them and the whole butter vs. substitute situation, are so hot that a spectator does well to keep his distance.

Many regulations for drink

AS THE states protect their citizens' health and assure their food supply, so they strive to maintain their sobriety—with equally divergent techniques.

State laws prescribe what manner of liquor may be sold, when and in what posture it may be drunk—sitting at a table, at the bar, standing, not standing. In some states liquor may be served with meals—elsewhere it cannot be. Here it may not be sold before noon, there, not after midnight.

Alabama taxes manufacturers of alcoholic beverages \$1,000 a year for each place of manufacture—but wine makers using 75 per cent or more of Alabama raw materials in their winery pay only \$25 for each place of manufacture. At least 25 states grant tax exemptions to home producers using home products.

Georgia levies a tax of five cents a gallon on "domestic" wine but the wines of other states must pay 40 cents. Washington state dealers who handle domestic wines exclusively pay \$50 annual license fee, but the importer must pay five times that much. Solicitors for foreign beverages in Massachusetts are charged \$100 to \$300 for annual fees as against the \$10 fee of those selling the local product.

In fact, no matter where the retailer, wholesaler or maker of alcoholic beverages turns, he finds that the tax collectors of practically every state and political subdivision have singled him out for special attention.

Almost all the states and hundreds of communities have also set up general preference laws favoring their own workers, contractors, products or printing. Chain stores, insurance companies and dozens of other commercial activities have also been made subjects of both state and local discriminations.

Another barrier, known as the Green River (Wyo.) ordinance, enacted by many communities, demands that "foreign" hawkers, vendors and traveling salesmen, particularly house-to-house operators, must register and pay special fees running from 50 cents to \$350 a day for the right to solicit orders. Sub-

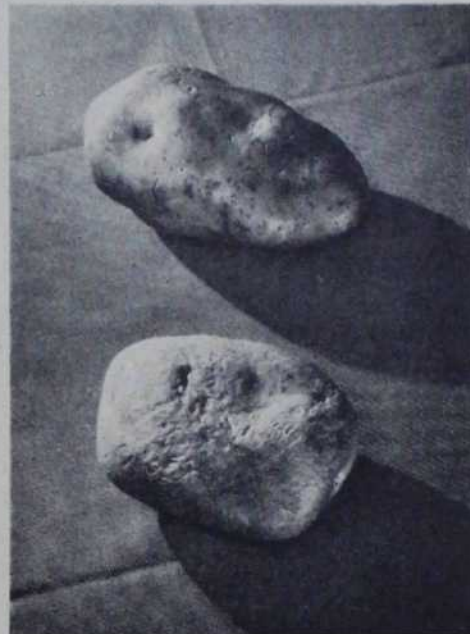
In 5 Years, Over 200 New Products at Work in 30 Basic U.S. Industries!



Paper makers use many different Process Products for sizing, impregnation and lamination of their products.



In the electrical industry Process Products are employed to provide protective coatings for wires, insulators, etc.



A new wax emulsion, sprayed on potatoes and other vegetables, keeps moisture *in*, bacteria *out*; protects during shipment.



Cosmetics, too, benefit from petroleum products. Both microcrystalline waxes and petrolatums help improve the quality of water-free creams.



Compounded with rubber, a Process Product forms a film on rubber goods and reduces sun checking or cracking.



Amazing Story of Process Products Research and Service

HERE is Petroleum's newest advance — amazing non-lubricating products used in processing operations. They are called Socony-Vacuum Process Products.

Already, there are hundreds of these products—over 200 added in the past five years to improve operations and lower costs in 30 industries.

Still there's no limit in sight. New products and new applications are being added all the time.

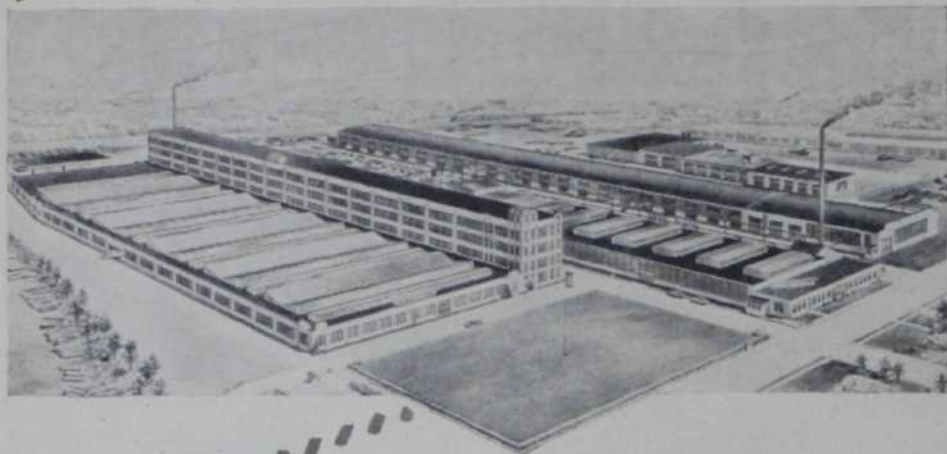
It's really a new service to industry. Socony-Vacuum engineers study your processing operations; show you what new products to use. Where special needs call for special research, Socony-Vacuum scientists work on the problem.

Let your Socony-Vacuum Representative give you full details.

SOCONY-VACUUM OIL CO., INC.,
26 Broadway, New York 4, N. Y., and
Affiliates: Magnolia Petroleum Company;
General Petroleum Corp. of California.

**A New Service to Industry by
SOCONY-VACUUM OIL CO., INC.**

THIS is what's behind every Trailmobile on the road!



ONE

A great, modern headquarters plant (shown above) and well-equipped branch factories at Berkeley, California and Charlotte, North Carolina.



Modern production facilities and methods—second to none in the industry—for turning out tough, low-cost-per-mile trailers.



A seasoned, resourceful engineering staff which includes some of the best minds in the business . . . backed up by a highly-skilled production organization.



A nation-wide network of Servicenters . . . 55 of them strategically located and equipped to give fast, expert repair and maintenance service on all makes of trailers. Ask for an up-to-date list.

The Trailmobile Company, Cincinnati 9, Ohio; Berkeley 2, California; Charlotte, North Carolina. Branches in principal cities.



TRAILMOBILE

scription, hosiery, brush, home appliance and other salesmen not residents of the town are thus discouraged or prevented from doing business.

Sometimes the trade restriction is a part of another statute. A Western city fire-safety regulation required that all doors on electrical switch-boxes must open in a certain unusual specified manner. That kind of a box was manufactured locally.

Building codes are restrictive

CLOSELY akin to such restrictions are the numerous building codes governing the use or non-use of specified materials sponsored by some manufacturers, contractors and the local building trades.

Sometimes the restriction is not even in the law. In New York City, Local No. 3 of the International Brotherhood of Electrical Workers has an agreement with local electrical manufacturers and contractors, under which the contractors and union workers refuse to install lighting fixtures, low tension switchboards, signaling equipment, panel boxes, control equipment, switches, high tension cables, armored BX cable, wire, outlet boxes, branch circuits and feeders, made by outside manufacturers.

This boycott is so effective that the union president can dictate who shall be a contractor and who shall not. In a case in the U. S. District Court, a local sign manufacturer testified that, when he asked for a union contract, the president of this union said:

"We don't want your shop because, after all, the small man makes it harder for the bigger shops to be in business. . . . Business is business. We are operating for a profit and we can't bother round with a little shop. . . ."

This trade barrier battle between the states is, at present, partly suspended. When restrictions began to interfere with the transport of war materials and vital supplies, most of the states agreed to forget about their respective inhibitions so far as war shipments were concerned.

Furthermore, the Council of State Governments, which for seven years has been trying to prevent the extension of interstate trade barriers and to re-establish free trade among the states through state cooperative action, has been very effective in getting rid of some of the most annoying and unfair regulations, as well as bringing more states into the reciprocity agreements.

Even so, there is no cause for celebration. Just recently, Maryland's Montgomery County barred doctors licensed in Washington (even though they live in Montgomery County) from crossing the line to treat patients unless they first obtain a full Maryland license. In retaliation, the District of Columbia has barred Maryland doctors from practicing there.

A sick man whose nearest doctor is across the line will see at once the results of this kind of regulation. The results of others, unfortunately, are not so painfully brought home but, if post-



We turned the tables . . .

on Tough Welding Jobs

Yes, we did just that! For in arc welding, position can often make the difference between tough jobs and easy ones, between high costs or low costs.

To solve the problem, P&H engineers conceived the idea of mounting heavy work on tables that could be rotated and tilted. It gave operators the advantage of welding in the easy down-hand position; permitted the use of larger electrodes. It assured better welding results, raised the efficiency of welding operators—made costs curves drop sharply.

Today these rotating tables, known as *Welding Positioners*, have become an indispensable adjunct to welding throughout the metal fabricating trades.

Welding Positioners are but one of many important contributions which P&H has made to the field

of arc welding. New improvements, new innovations are coming every day to extend the applications of arc welding in all types of industry.

It is natural that many of these developments should originate here, for P&H is not only one of the largest *builders* of arc welding equipment, but also one of its largest users.

Manufacturers of

P & H

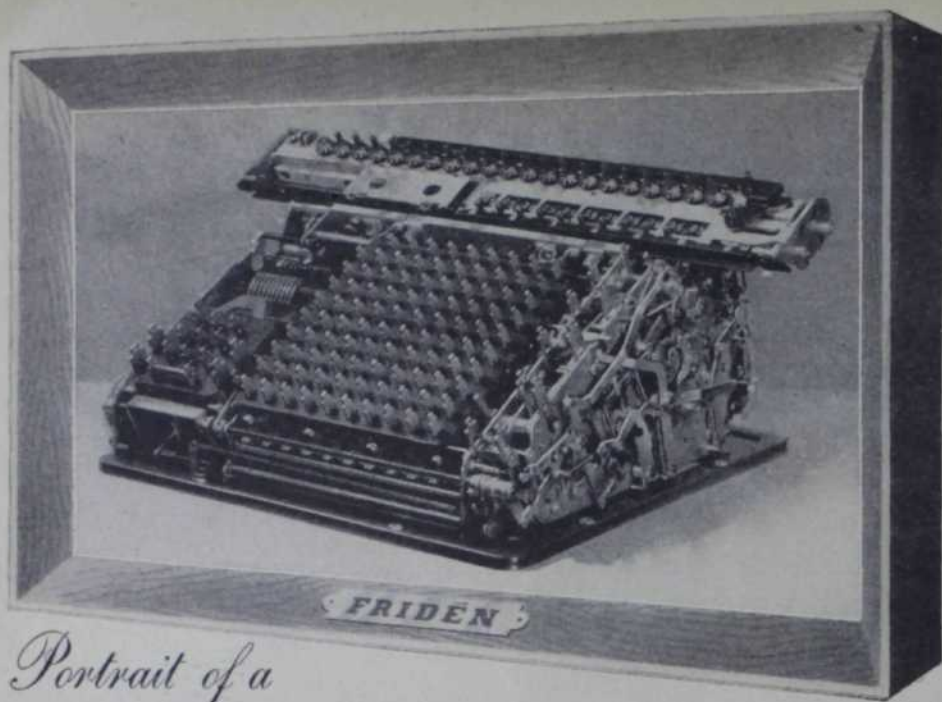
Overhead Cranes • Electric Hoists
Excavators • Welding Positioners
Arc Welders • Welding Electrodes

MILWAUKEE 14, WISCONSIN

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CORPORATION

EXCAVATORS • ELECTRIC CRANES • ARC WELDERS **P&H** HOISTS • WELDING ELECTRODES • MOTORS



Portrait of a **MECHANICAL MIND**

Here is a Friden Fully Automatic Calculator with its streamlined covers removed....a figuring instrument comprised of thousands of parts of infinite precision which work together in perfect coordination to produce answers of absolute accuracy.

This Friden conceived and built mechanical mind reduces multiplication, division, addition and subtraction to its simplest form. Merely set in the factors and touch the proper key...for with a Friden the calculator and not the operator does the work.

Why not put this tireless and unfailing mechanical mind to work on your figure production? Contact your local Friden Representative, or write to the Home Office in San Leandro, California, for complete information regarding these calculators which are available when applications for delivery have been approved by the W. P. B.

Friden Mechanical and Instructional Service is available in approximately 250 Company Controlled Sales Agencies throughout the U. S. and Canada.

FRIDEN

FRIDEN CALCULATING MACHINE CO., INC.

HOME OFFICE AND PLANT • SAN LEANDRO, CALIFORNIA, U. S. A. • SALES AND SERVICE THROUGHOUT THE WORLD

war commerce is to have the strength and vigor the country hopes for, some uniformity is necessary. Health, safety, and decency must be protected but the average citizen can invest some well-spent time in determining that the type or regulation designed for the job is not also a trade barrier—whether it is a necessary exercise of authority or a sick trick to provide undue advantage for somebody.

In the long run, such vigilance is better, though perhaps not so immediately practical as the action taken by the citizens of a certain state. There they elected a sheriff whose platform was "non-enforcement of the motor vehicle laws."

We've Stopped Hunch Hiring

(Continued from page 24)

or-made" test, carefully constructed for your "two-hands-one-foot" machine, will tell you plenty about Mildred White's ability to make good on your job; and a precision eyesight test at 20 inches will take the guesswork out of the eye-sight requirements for your lens-grinders' positions.

A test which is really designed for a particular job will sell itself to you.

After conversion, it will be extremely important to test prospective applicants, because by then, the old hiring methods will have even more disadvantages than now.

For one thing, mediocre and even poor workers will have experience. Employers have been forced to keep them on during the war. On the other hand, many good workers will be coming out of the service, with little or no experience to present at the employment office. Therefore, experience alone won't be a satisfactory basis for hiring. It will discriminate against the good worker and select too many costly, inefficient workers.

Guesswork or hunch hiring will likewise be expensive. Misfit workers will talk their way in, and have to be got rid of. That is bad for the company's personnel relations and bad for the misfit's self-respect.

With testing, however, you can persuade a man that the company has no job that fits him.

If he has passed the tests and been hired, he will have more self-assurance on the job, even at the beginning. The foreman, too, being assured that he has a tested applicant to work with, will be more likely to have patience in the training period and later.

All of this seems to recommend pre-employment testing highly for the employer who really wants to get his share of the good workers and cut his costs at the same time.

After all, why not do your hiring the efficient way?

War Fund...

ONCE a year a financial contribution is asked to help support the work that is freely given war's victims



THE WAR is not ended. Even when the last gun is fired, it will be many months, perhaps years, before all the fighting men are home. Even then many men will be in hospitals for long periods of recovery.

The war is far from being over for the Red Cross. That should be engraved on your mind when you make your contribution to the Red Cross War Fund campaign this March.

Last year the Red Cross aided over 60,000 victims of disaster. It shipped prisoners of war 10,800,000 food parcels and additional parcels of clothing and medical supplies. It maintained more than 700 clubs and rest homes overseas. Clubmobiles, theaters, bathing beaches, canteens helped things overseas, too.

Last year more than 80,000 volunteers were trained for hospital service. First aid, home nursing, water safety training continued. Through the Red Cross, 15,000 nurses were recruited for service in the Army and Navy.

The Red Cross Blood Donor Service now supplies whole blood to the armed forces in addition to providing for the plasma program. Whole blood is flown to the war theaters where it is used to supplement plasma transfusions.

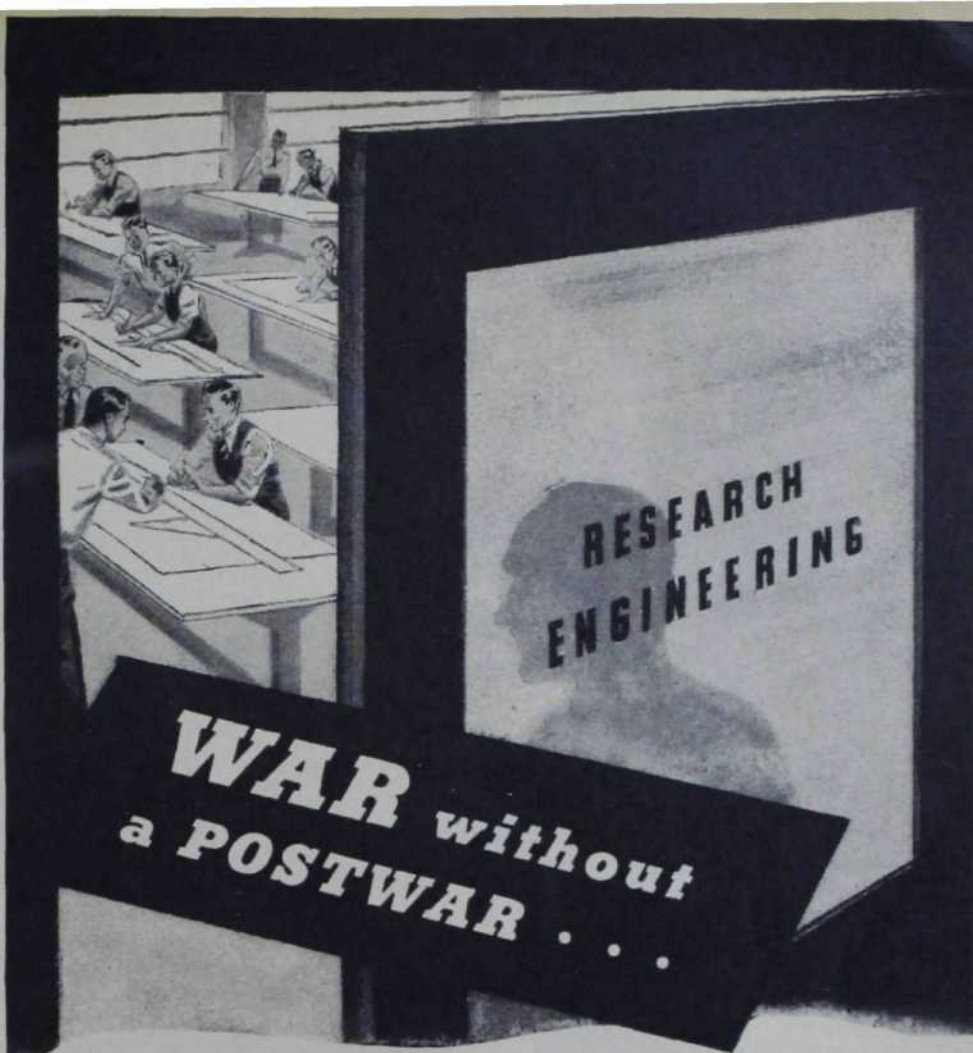
There are 1,600 Red Cross hospital workers overseas. They provide medical social service and recreation to the wounded and advise concerning government benefits and Red Cross services available on their return home.

The Red Cross has 200 clubmobiles in operation. Of these, 39 are cinemobiles which bring movies and music to our fighting men in the field.

Three hours after the initial landing on Leyte, American Red Cross men had established beach-head canteens serving coffee and other refreshments.

Special home-nursing courses; flight kits for wounded being evacuated; reading matter and other material for hospital ships and other patients.

It is all too much to forget when you contribute to the War Fund campaign.



THE never-ending war on industrial inefficiency and waste is your war, too,—the fighting of it a cooperative effort. Your equipment problems, however insurmountable they may seem, are excellent targets for Cleaver-Brooks engineers.

Many industries serving farm, factory, highway, institutions, and military services have learned this to their own benefit. Cleaver-Brooks product research and development are in the minds and hands of engineers who readily defy the books in order to produce more productive, more practical, more efficient machines.

You tell us your problems, particularly those involving

steam or heat for power, processing, construction and other uses, and we will gladly take up the battle for greater efficiency and less waste in your plant. Perhaps we already have or can design and build the equipment to do the job — better.



Cleaver-Brooks oil-fired steam generator of the type in service at military bases. Cleaver-Brooks products include bituminous heating equipment and special units for the armed forces for water-distilling, bathing, disinfecting, sterilizing and other important hygienic needs.

Cleaver-Brooks

MILWAUKEE 9, COMPANY

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★ CLEAVER-BROOKS PRODUCTS INCLUDE: ★



Steam Generators



Food Processing Equipment



Tank Car Heaters



Oil & Asphalt Heaters



Special Military Equipment

Air Express Gains 3 Days, Saves \$4,150



A PLANT in California faces a shut-down for want of critical equipment made in New Jersey. Figuring a loss of \$1,500 for every day his plant is idle, the president picks up a phone and orders the equipment sent Air Express, even though the shipment is sizeable. (When time means money, Air Express pays—always!)



THE COST? Higher, yes. But by air, coast-to-coast delivery is made *overnight*—rather than in 3 or more days by other means. Air Express cost, by the way, includes special pick-up and delivery.

WOULDN'T YOU pay more to save a whole lot more? That's why thousands of manufacturers use Air Express as a matter of routine. Heavy or light, large or small, if shipment fits in a plane, it can go Air Express.

Specify Air Express — Low Cost for High Speed

25 lbs., for instance, travels more than 500 miles for \$4.38, more than 1,000 miles for \$8.75, more than 2,000 miles for \$17.50, at a speed of three miles a minute—with cost including special pick-up and delivery in all U.S. cities and principal towns. (Often same-day delivery between airport towns and cities.) Direct service to scores of foreign countries. Rapid air-rail service to 23,000 off-airline points in the United States.



AIR EXPRESS



GETS THERE FIRST

Write Today for "Quizzical Quizz", a booklet packed with facts that will help you solve many a shipping problem. Railway Express Agency, Air Express Division, 230 Park Avenue, New York 17. Or ask for it at any Airline or Express office.

Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

If You Make It, Can You Sell It?

(Continued from page 34)

materials are available. (It does not serve famished civilian markets to demonstrate that alarm clocks, for example, can be produced for 69 cents each in a certain locality, if nobody there has the manpower or materials to make them. Is that any reason why another city should not be permitted to make them for \$1.19, if manpower and materials are available?)

4. Price determinations should be made on the basis of negotiations, not on the basis of penalties and compulsions imposed under threat of civil actions in the federal courts.

5. Extra costs incident to quick re-conversion, to take advantage of temporary supply situations in manpower and materials, should be considered in fixing tentative seasonal prices. (Only by absorbing the added costs of quick adjustment and hasty production can hundreds of small pools of surplus materials be diverted promptly to civilian items.)

Fair prices are needed

AS EVERY business man knows, OPA has been dealing vigorously with the problems of reconversion pricing for six months. Many satisfactory solutions have been reached in some of the major lines of production. Others are in the works. Through the industry advisory committees, the various OPA divisions are making an earnest and laudable effort to arrive at the right answers.

Success in this work will go far toward heading off postwar inflation. Government statisticians estimate that the American people now have something more than \$100,000,000,000 accumulated in liquid savings. Sound pricing policies will be imperative to flourishing business. Runaway prices in a starved civilian market with more than \$100,000,000,000 in ready purchasing power hanging over it, could dislocate the entire national economy for several years.

Every business man wants to help in the solution of this basic problem. Despite his dislike for government forms and questionnaires, the business manager would prefer to work his prices out on a sound and common-sense basis. In this effort, he must be accorded businesslike treatment by the operating agencies of Government. Almost nowhere in business do we ever find those ideal conditions of production which justify the theoretical minimum prices of the slide-rule calculators. In every situation, some factor in the production equation is likely to be out of joint. Practical men realize this, and solve their problems accordingly. OPA can help in that direction.

The prize is great—more production, which is, after all, the one real check on rising prices.



America Knows—
**Chevrolet Cars and Trucks and
 Chevrolet Dealers Have Met the
 Test of Leadership**

**1 OUT OF EVERY 4
 CARS IS A CHEVROLET**

★
**1 OUT OF EVERY 3
 TRUCKS IS A CHEVROLET**



**MORE PEOPLE GO TO
 CHEVROLET DEALERS FOR
 CAR AND TRUCK SERVICE
 THAN TO ANY OTHER
 DEALER ORGANIZATION**

*—according to all
 available service records*

You can be sure of this . . . WAR LEADERS WILL BE POSTWAR LEADERS, too! . . .

Meanwhile, may we suggest that you continue to conserve your car or truck by getting skilled, dependable service at your Chevrolet dealer's until the day when new

Chevrolets arrive in volume. Chevrolet dealers have efficient mechanics, modern tools and equipment and Chevrolet-engineered parts. . . . Buy war bonds—speed the victory.

CHEVROLET

“FIRST IN SERVICE”

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

They Get All the Credit

By PAUL D. GREEN



Every hamlet has credit bureau information and exchanges it with larger bureaus

IN an upper New York State town a disturbed man entered police headquarters.

"Could you help me locate someone who has moved from a certain address?" he asked the officer at the desk.

The policeman shook his head. "You might try the credit bureau. Moving companies send them names of every person they move."

The man hurried over to the credit bureau.

"Do you have any record of Mrs. John Doe who lived at 42 Sycamore Street?" he asked.

The man looked through the files and found a card.

"Here we are. Mrs. John Doe moved this morning to 144 Pine Street."

"Thanks," said the distraught gentleman. "She's my wife. I just got home and discovered she'd moved out with all the furniture."

This is typical of the extent of the services a credit bureau performs. It's an even money chance that your name is on record at one of the nation's 1,300 agencies organized under the aegis of the Associated Credit Bureaus of America. More than 50,000,000 names are on file at these offices with considerable personal history attached to each name. Almost every person who has ever bought the first bedroom set on time, or signed a lease or clothed himself on the cuff is tabbed as good or not so good at one or more credit offices.

Cooperation in retail credit

IT matters not where you are in the United States, there is a credit bureau for your town, be it a milk stop, crossroads or metropolis. The bureaus are closely knit into a powerful cooperative group which feeds them reams of advice on the conduct of their affairs from their home offices at St. Louis, Mo. Each bureau is formed with the approval of the A.C.B.A., ever on the alert for the opportunity of adding more members where territories become lively.

They may vary widely in set-up from a mutual non-profit association, as 79 per cent of them are, to an out-and-out corporation. Most of the bureaus are full-blown organizations but some are adjuncts of the local chamber of commerce, others are run in connection with the local real estate and insurance agency. A few are situated in general stores.

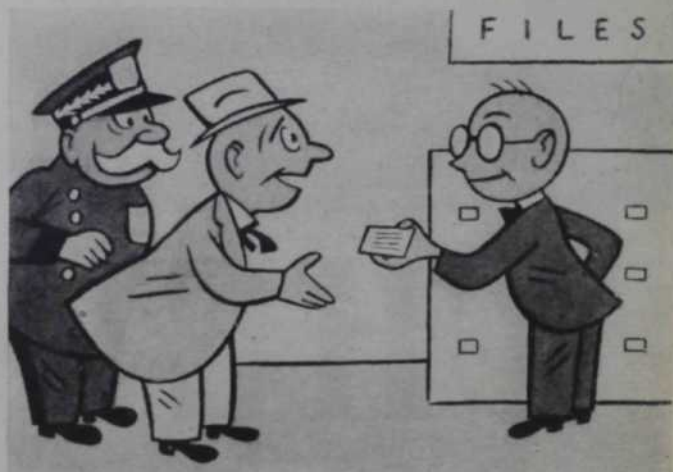
CREDIT managers don't give credit any more because of the way people comb their hair. There is a nation-wide system which shows on what that credit can be based

If you could dip into the files of the local bureau you'd find out such pertinent things about your neighbor as how much rent he pays, how often he's moved, his employment, charge accounts, marital status. If he got into financial trouble and made the papers, there'll be a record, since the bureaus habitually note every published item of suits and judgments for delinquents. If the fellow once took a flyer in forging checks, or dead-beating retail stores, that will be there. Newspapers and trade papers are scanned assiduously for any item which may bear on a person's financial stability and entries are made on name cards whether or not an inquiry has ever been made about him.

Not everybody can have access to these interesting personal statistics, however. They are released only to *bona fide* members of a credit bureau who have legitimate businesses making use of charge accounts, installment accounts, personal loans or other forms of credit. This takes in a lot of territory and includes besides the obvious users, hospitals, doctors, schools, country clubs, night clubs, and funeral directors.

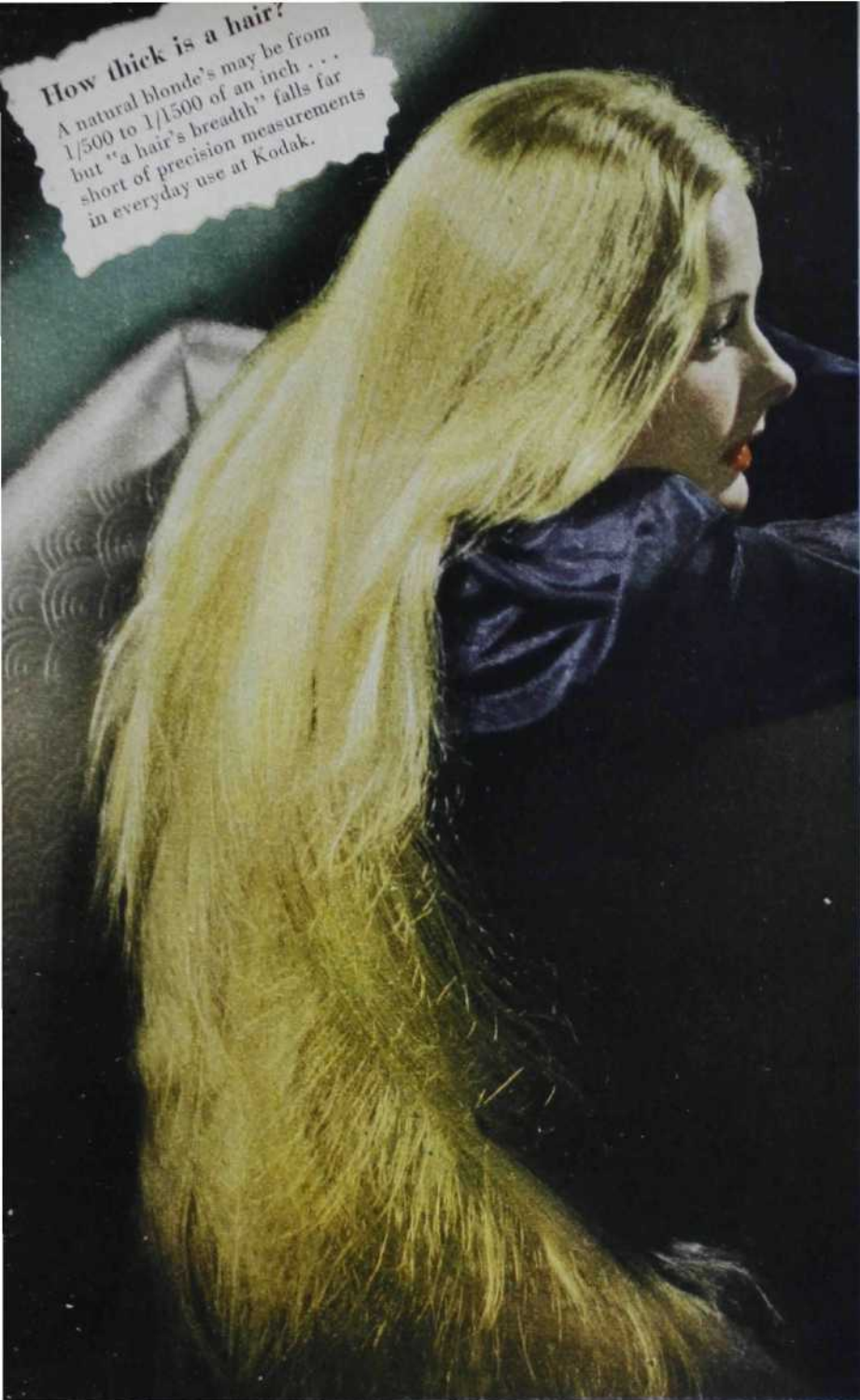
Doctors are notoriously in need of credit advisers—the tales of their low-collection percentages are legion. One West Coast medico, weary of the sheaf of unpaid bills stuffed in his desk year after year, broke the log jam by writing each of his more affluent patients that, if his bill were paid, the doctor could cancel the indebtedness of one of the needier for Christmas. Another medical man willed thousands of dollars in unpaid bills to the local orphanage. They were paid promptly.

To develop and maintain complete credit records is a



Files of information in credit bureaus often aid in the location of missing persons

How thick is a hair?
A natural blonde's may be from
1/500 to 1/1500 of an inch . . .
but "a hair's breadth" falls far
short of precision measurements
in everyday use at Kodak.



From a Kodachrome original

● To approach perfection, they magnify errors . . . with the "Comparator" they magnify a tiny camera part 100 times, projecting its image against a master chart. Any variation from the model means rejection of the part.

Serving human progress through photography

● REMEMBER CLARK FIELD—the first Philippine fighting?—How three years ago with less than a dozen battered early-model Flying Fortresses our boys went out time after time—5 to 10 bombers against the whole Jap fleet—18 hours at a stretch in the air—no fighter protection—shot full of holes by swarms of Zeros—fighting to the last? Theirs is a stern example to us.
BUY—AND HOLD—MORE WAR BONDS.



PRECISION

. . . as practiced in the

Kodak Camera Works

makes standard comparisons

"dead as the Dodo"

TECHNICIANS at Kodak deal with "invisible elements": splitting light waves instead of hairs . . . or accurately splitting a second into 1000 equal fractions . . .

Gages they use every day, in checking the precise shape and size of camera parts, are accurate to hundred-thousandths of an inch. Some of the camera parts themselves are so tiny that they must be handled under optical magnification in inspection and assembly.

"Quality control," as it is called at the Kodak Camera Works, has become the most exacting of sciences—yet over the years has been systematized to the point where it represents only a small fraction of the cost of your camera.

This small fraction is by far the most important part of the price.

It means the difference between a camera that performs and keeps on performing, getting great pictures year after year—and one that "looks swell" on the counter, but shows its lack of precision where it hurts . . . on your photographic film.

Kodak precision has been a long time growing. Thousands of Kodaks and Brownies, "as good as new" in performance after 10 or 20 years of use, demonstrate its historic importance to photography.

"Postwar" Kodaks, now with the Army and Navy, are the precision tools of Military Photography. Other postwar Kodaks are on the designing boards or in test operation. You'll have precision to higher standards than ever before, in a wide choice of models and prices . . . cameras that make your dreams come true!

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.



One of a series illustrating Cyanamid's many activities.

MINING COMES UP FOR MORE

No doubt you usually think of coal mining as an underground job. It is, of course. But now that extra quantities of fuel are needed, operations in many fields are being carried out on the surface too—and millions of additional tons of coal are being "mined" in broad daylight.

In strip mining, as this surface mining is called, the top layer of earth above the coal seam is loosened with high explosives and removed by huge power shovels, like the one illustrated here, which scoops up 35 cubic yards at one bite. In addition, hundreds of bulldozers, draglines, scrapers, tractors and trucks have been brought into service to speed up production.

Naturally, all operations are on a big scale, including the use of explosives. In some instances overburdens 50 feet

deep, 80 feet long and more than 200 feet across, are "shot" down and loosened into easily handled material in one multiple blast! The success or failure of such operations depends greatly on the proper application of explosives.

Here the skill and experience of Cyanamid explosive engineers in developing a special line of explosives for this purpose are proving of vital importance. Their work, indeed, is one of the factors that has made possible the economical production of more than sixty-five million tons of coal in 1942 and seventy-six and a half million tons in 1943.

The manufacture of industrial explosives and the improvement of their quality and efficiency for use in mining, quarrying, road

building and other construction are functions in which Cyanamid has long taken a leading role. It is part of the broad scale chemical service through which Cyanamid is helping to make industrial progress.



**American
Cyanamid Company**

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

mammoth task, depending a great deal on the guidance of national headquarters, and also on the heads of credit offices. Typical of the men in the credit movement is the recently elected president of the Associated Credit Bureaus of America, energetic A. B. Buckeridge of Rockville Center, N. Y. The amiable Mr. Buckeridge also happens to be General Manager of the Credit Bureau of Greater New York, the largest in the world, with more than 5,000,000 names on file.

Mr. Buckeridge is an enthusiast on credit, having been connected with the business since its inception over 28 years ago. At present his duties are of national scope, involving the formulation of national plans for the postwar position of credit bureau men.

Using his own bureau as an example, Mr. Buckeridge outlines how they go about obtaining information. His bureau's methods are used throughout the country to varying degree. Every inquiry from a member about a new person automatically adds a name to their files forever. If the name was already on file, it has listed against it all previous inquiries and reports by stores, or anyone giving them credit. If any one of them had requested a "special" or detailed resume of a person's activities, a copy is attached to his file. Every member is continually impressed with the idea of reporting delinquencies immediately, which they do at the rate of 6,000 monthly in normal times.

Special credit notices

IN EXCHANGE, bureaus cooperate with retail stores by flashing them special advices such as notices of husbands refusing to recognize debts incurred by their wives. One irate woman who found she could get no more credit at her favorite shops as the result of such a flash, promptly went to her husband's office for a reconciliation. He called off the restriction on her debts, whereupon she went to town. The flood of bills he got at the month's end caused him to notify the local credit bureau.

"Cut her off again. And this time make it permanent."

When a member requests special information up to date, the bureau sends out an investigator who interviews people who come in contact with the subject—his landlord, employer or neighborhood grocer. In normal times, the New York bureau alone receives 3,000 inquiries daily of which 20 per cent are new names not on record. Thus it adds 18,000 new names a month.

If you're a member of the credit bureau, you can get the information any way you want it, straight, diluted or filled with interesting anecdotes. You can get it by mail, messenger, telephone, teletype or telautograph and some day—Mr. Buckeridge hopes—by television. The speedy business of the multimillion dollar turnover of department stores and banks necessitates many instant decisions, and nothing but a telautograph or teletype will do. Twenty-eight



Commercial Controls Corporation

of Rochester, New York

is honored to announce that the

Army-Navy Production Award

for

High Achievement in War Production

was presented to the

Men and Women of Plants A and B

on Friday, February 16, 1945

Picker X-Ray Photo

● Armor plate must be flawless or our soldiers will be endangered. Engineers must *know* the metal is perfect . . . so an X-Ray picture gives proof in one look.

Quick proof also is important in your business figuring. You must *know* the figures are right... and the Printing Calculator's tape proves all factors in one look.

Notice the tape as the machine prorates the electric light expense of \$112.75 for three departments. Floor spaces are 1362, 1135, and 1223 sq. ft. with \$0.030309 as the cost per sq. ft. The machine multiplies the cost by the square feet in each department, and finds and proves the prorated expense of \$41.28, \$34.40, and \$37.07.

Take a look . . . the printed tape is your permanent proof. You *know* you're right the first time.

ONLY the all-purpose Printing Calculator *prints* as it multiplies, divides, adds and subtracts. It saves time and avoids mistakes because there's no copying from dials, no need for extra proof.

Inexperienced clerks figure on this machine easily from the very first day because of its simplified operation. The 10-numeral-key keyboard requires no specialized training and leads naturally to touch operation.

In every kind of figure work—statistics, billing, pay-rolls, etc.—the Printing Calculator aids business to more accurate fast figuring. Let it aid YOU. Phone the nearest Remington Rand office for a demonstration *Today*, or write to us at Buffalo 5, N. Y., for the free booklet TOPS.

The Printing Calculator is available on WPB approval, to help conserve manpower, expedite warwork, maintain necessary civilian economy. Talk it over with our representative.

Remington Rand

AUTOMATIC PRINTING CALCULATOR

The only PRINTING calculator with automatic division

New York stores have direct wires to the teletypewriter set-up in the bureau's office, so they can receive up to date credit dope while a customer is still pondering the color of a lamp shade.

Credit bureaus cooperate with each other in a national network of exchange. The average bureau's files include more than 20 per cent of out-of-towners—people who visited the place on vacation, or buying trips, or temporary work. An office in Chicago may be advised that a person whose record is on file there is moving to California. Forthwith a copy of his record is forwarded to the sunny state so he can begin charge purchases immediately.

The main purpose of a credit bureau is to supply information, not to pass judgment on a person's credit standing. None of the nation's bureaus comment on whether or not credit should be extended. They merely supply the facts that will enable a credit manager to decide for himself. With complete information at his disposal, it is hard for him to make a bad guess. He also has the nationally high percentage of honesty working with him. Losses from charge sales to firms using credit bureau information are less than one-half of one per cent of sales. On the other hand, numerous cases have been reported of small business firms selling on credit without recourse to bureau records with losses running as high as ten per cent—the difference between profit and loss.

Help for bad accounts

THE credit bureaus are ready to help you collect the small margin of bad accounts which are unavoidable. They operate expert skip-tracing units for bad checks and professional dead-beats. Our current prosperous economy has slowed down this department somewhat because prosperity has opened up new and more lucrative fields of financial finagling for habitual sharpsters. Sometimes collection efforts take credit men far abroad, such as the job the New York Credit Bureau was called upon to do with the accounts of Sloppy Joe's in Havana when the war cut off its tourist trade.

Sometimes a nicely put letter can do the trick. Recently the collection department, attempting to collect a small bill from a Midwest lawyer, found that no other lawyer would handle the case. So the collection manager wrote the local sheriff—name unknown—a letter asking his cooperation. The answer came back promptly, with a check drawn by the sheriff, who happened to be the debtor.

Sometimes employers ask the bureau to investigate potential employees, or to supply credit information on old ones. Employers have found that a person who is overlaid with debts reflects it in his work and disposition. Credit standing is a true reflection of a man's character, indicating his stability, honesty and that he keeps his promises.

Bureaus are occasionally assigned to

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Peerless Pumps

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The irrigation pump pours out torrents of cool, clear water from deep underground... arid wasteland turns green and bears fruit. In great cities and humming factories, batteries of pumps supply hundreds of thousands of gallons of life-giving water every minute. *Wherever water is pumped—*

cities, factories, ranches, overseas with our armed forces—Peerless Pumps are known and preferred. Whatever its type—Turbine, Hi-Lift or Hydro-Foil—every Peerless Pump embodies the superb engineering, advanced design and sound construction that is typical of all products made by FMC.

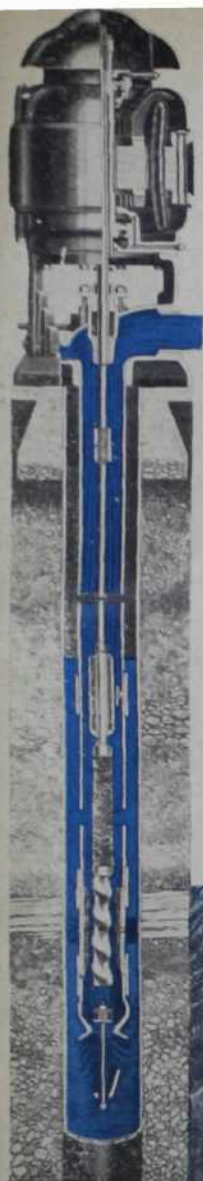
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EXECUTIVE OFFICES: SAN JOSE, CALIFORNIA

MANUFACTURING DIVISIONS:

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DUNEDIN & LAKELAND, FLORIDA; HARLINGEN, TEXAS
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PEERLESS PUMP DIVISION
LOS ANGELES AND FRESNO, CALIFORNIA; CANTON, OHIO

SPRAGUE-SELLS DIVISION, HOOPESTON, ILLINOIS
ANDERSON-BARNGROVER AND BEAN-CUTLER DIVISIONS
SAN JOSE, CALIFORNIA
NIAGARA SPRAYER & CHEMICAL COMPANY, INC.
MIDDLEPORT, NEW YORK



Above: Cutaway view of Peerless Hi-Lift Pump.

Shown Below: 5 Peerless Pumps serving city of Los Angeles.



At right: Peerless Deep Well Turbine Pump in a California date grove.



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—N. Y. Times Book Review

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special surveys for such things as the popularity of an item of merchandise, trends of reactions to current events, circulation of magazines.

A major bureau feature is the "Locate Department." They have developed a comprehensive technique for tracing people and their efforts have been used for purposes far beyond their original intention. For instance, they have helped find wandering husbands and wives, have cooperated with local police in locating inveterate swindlers and have tracked down heirs to sizable estates.

A novel twist to the heir-locating department came up recently. When a Brooklyn man was drawing up his will at home, the lawyer went out on the street and asked a passer-by if he'd witness the will to make it legal. The stranger obliged by signing his name but the lawyer forgot to get his address. When the client died and the will was probated a search was instigated for the witness and the credit bureau was enlisted. They canvassed all of the people in the neighborhood with the same name as the witness to no avail. Finally the credit bureau man read of a large Bingo prize won at the neighborhood theater by a man of the same name and he investigated. It was the missing witness.

Real estate companies use the bureau for information about prospective tenants, not so much for their paying habits but for their playing habits. Credit bureau files have turned up such

lord's property and think nothing of cracking a door or two.

All of this and much more is available for the proper person or organization. But, fortunately for business men as a whole, the crack-pot and unstable element is in the minority and Americans who use charge accounts or borrow money are 99.96 per cent honest about paying their obligations. There was a time, during the depression, when credit standings of many people were endangered through circumstances beyond their control. Short-sighted prophets at the time predicted that the nation's debtors would almost unanimously repudiate their debts, preferring bankruptcy to the nightmare of indebtedness. It is a remarkable recommendation of the national character that the prophets were wrong and the vast majority of Americans met all of their obligations even though it took years for many.

Help for shaky credit

THE nation's credit bureaus rallied to the situation by helping thousands to recover their sagging credit standings. They inaugurated a pooling system, whereby they took over a person's debts and rationed out his income fairly until they were liquidated.

This foresighted method of handling people's financial problems had a two-way advantage—it forestalled a bad credit record for a conscientious per-



Landlords are more interested in who are
noise-makers than in strict credit matters

fascinating characters as the man who kept a live alligator in his bath tub, another who decorated apartment walls with risque murals. The files are filled with records of struggling and professional musicians who practice their tootings or string-stirrings in the wee hours; and the names of chronic jitter-bugs who are forever rug-cutting until they shatter the chandeliers and nerves of the citizens beneath. The bureaus have a roster of habitual fire-bugs and people who are indifferent to a land-

son beset by adverse conditions and automatically restricted further indebtedness.

This is a most important angle, according to Mr. Buckeridge, especially today.

"There is an old saying," says Mr. Buckeridge, "that a man who has no money, no credit and no friends is a poor man indeed. Keep your credit good—it is a great convenience when times are good and a wonderful help when they are bad."

They Like Small Towns

(Continued from page 40)

to reach. Gardens, lawns, picnicking, fishing, hunting—all the outdoor recreation one needs—is available quickly.

3. The tempo of small town living is less strenuous. No long commuting trips to and from work, no rush hour traffic, no scramble to shop. Time saved can be devoted to hobbies and recreation.

4. Workers see more of their fellow workers and employers. The employer may belong to the same lodge as his employees. People meet in church, at social gatherings and at the movies. This is a powerful factor in establishing mutual understanding of management and workers.

5. A large percentage of workers are home-owners. This gives them a stake in the community, makes them interested in the welfare of the town, of which their company is a part. Because they become interested, active citizens of the town, they are better workers.

6. Raising a family in a small town has advantages. Not the least of these is the democracy-in-action which results from the friendships of all the town's youngsters. The manager's children, the foreman's family and the workers' youngsters attend the same schools and play on the same playgrounds.

7. Small town people are settled, with few drifting and indifferent workers. Skills and crafts of some small town workers are passed on from father to son, so that a community becomes known for its paper makers, furniture workers, machinists.

Certain industries find small communities especially advantageous. W. S. McClellan, vice president of P. H. Glatfelter Company, paper manufacturers of Spring Grove, Penn., (pop. 1,259) says:

"Of 973 paper and pulp mills in 513 towns, 58 per cent are in communities of fewer than 10,000 and 84 per cent are in communities of fewer than 50,000.

"Once established, pulp and paper mills are rarely moved. They require large areas, heavy machinery, and great quantities of water. The space and water are most readily available in small towns."

Cola G. Parker, president of Kimberly-Clark Corporation, Wisconsin manufacturers of paper and paper specialties, says:

"We examined at length the question of moving our head office from Neenah, which is a city of just over 10,000, and determined to remain where we

are. Except for corporate taxes, we found no advantage in moving, nor any advantages in recruiting personnel. We have never found any difficulty in persuading people to come to Neenah to live."

Of course, all manufacturers do not require the same type of facility as do our paper, lumber or steel mills.

Frank LeMaire, president of the Manistique Tool and Manufacturing Company, Manistique, Mich., (pop. 5,399) believes the importance of location for an industrial plant has been much overrated. He says:

"The important factor is the determination of management to overcome obstacles and to find a workable solution to every problem. We could take this plant to Alaska and run it successfully."

"No longer need industrialists hesitate to establish themselves in small communities because of a shortage of skilled labor. Unskilled labor can be trained to operate the most delicate machinery within a relatively short time and to do the job with efficiency and perfection."

And the president of another worldwide business, Kenneth S. Parker of the Parker Pen Company, Janesville, Wis., (pop. 22,992) makes this interesting comment:

"The characteristics of our business would all seem to favor metropolitan

headquarters. Our sales are definitely urban and our biggest sales operations are in the biggest cities. Style and preciousness are just as important factors in our product as they are with Cartier. Elaborate research in chemistry, physics, metallurgy, and engineering is carried on here although work of this nature is not normally a small town function.

"Also, we have a large export business. Our per capita sales, when the factor of literacy is considered, are practically as heavy in most other countries (except three) as they are in the United States.

An advantage in detachment

"CONSIDERING these phases of our operations, anyone would assume the best place for us to operate would be in some center teeming with advertising experts, exporters, research scientists, stylists and other geniuses. There are advantages in a detachment from these people, begging their pardon, as we can easily go and see them or have them come to see us. That keeps everyone in motion, and I am thoroughly convinced it is those people who do keep in motion, who think up the money-making ideas for this company."

Most executives of small town businesses have been small town men all their lives. But they have made a point of studying big city conditions and most of them are convinced, as Lothair Teetor said:

"We would rather have our kind of troubles than their kind of troubles."

"If I should put down all the reasons I think manufacturing in a small town is cheaper, or more efficient, or carries a higher degree of satisfaction for management, I am sure managers of factories in cities could successfully contradict almost anything I might say. I believe, however, that on the average:

"1. Cost of buildings and grounds in a small town is less than in most cities.

"2. You can do many things quicker in a small town. The freight agent, the ticket agent, the express agent, the local merchants are within a few blocks of the factory and usually they give the small town factory preferred attention.

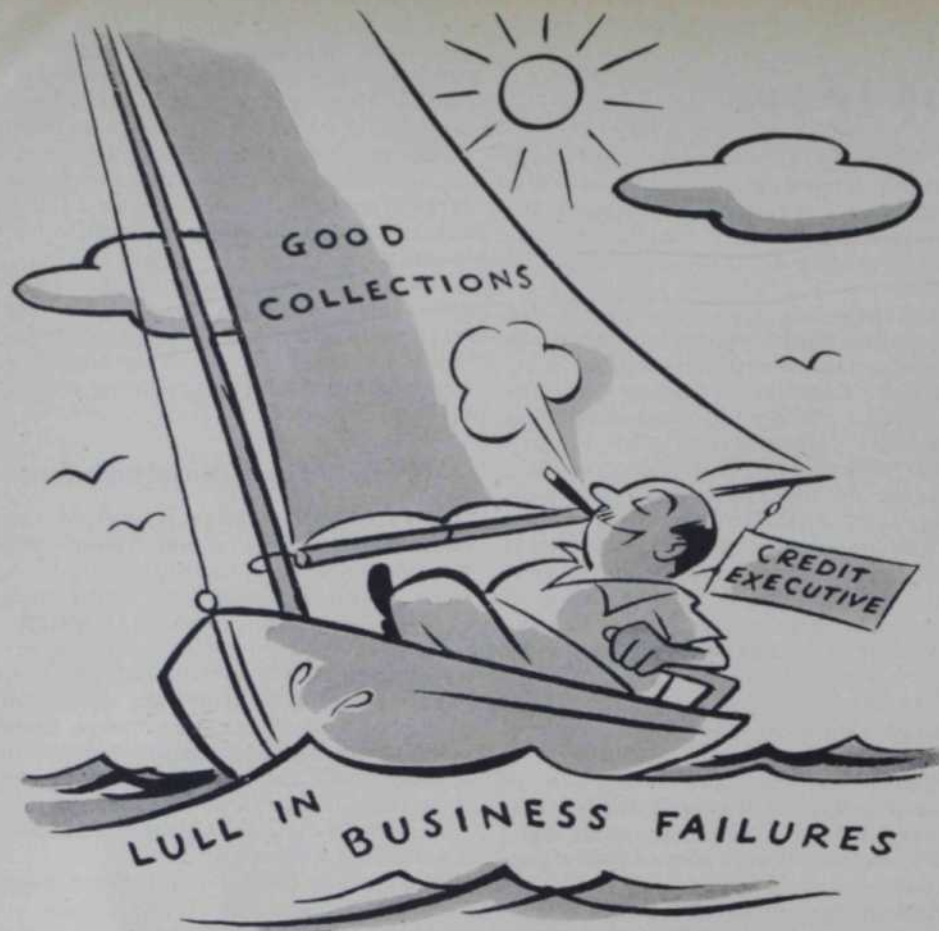
"3. Employees spend much less time going to and from work, and so have more hours with the family, in the garden, to work on their hobbies. This helps keep them satisfied.

"4. I think a small town is a better place to rear children than a large city. I know many persons disagree, but the standard of small town schools is much higher than most people think.

"5. Advantages of small town life attract good man-



Living close to their jobs, workers have more time for hobbies and recreation



Easy Sailing Now...but there may be Rough Going Ahead

LOOK at the accompanying chart . . . which shows how failures multiplied after World War I. In three years . . . from the 1919 level . . . the number of commercial and industrial failures jumped 267%. Current liabilities involved jumped 450%.

Will history repeat? Will failures multiply again? No one knows. Even now . . . upsets caused by unforeseen developments after goods are shipped may leave customers frozen . . . or worse. That's why manufacturers and wholesalers in over 150 lines of business carry American Credit Insurance . . . and why you need it too.

American Credit Insurance **GUARANTEES PAYMENT** of your accounts receivable for goods shipped . . . pays you when your customers can't. Don't face the uncertain future unprotected. Write now for more information to: American Credit Indemnity Company of New York, Dept. 41, First National Bank Building, Baltimore 2, Maryland.



J. T. Madden
PRESIDENT



American Credit Insurance

*Pays You When
Your Customers Can't*

OFFICES IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

agers and technicians. It is possible to have a home in the country and be within five minutes' driving time of any of our plants except Toronto.

"6. In small towns it is necessary for the managers and for other employees to take an interest in service to the community. In a small town a much larger percentage of people participate in citizenship obligations than in the larger centers. This makes better citizens and better Americans."

And here are some obvious disadvantages:

"1. Generally speaking, everybody in town knows the business of everybody else in town. Rumors about the management, including how much money the executives make, where they go, what they do, frequently exaggerated and frequently erroneous, often create bad feelings and jealousies which would not be possible, or at least would not be personal, in a large city.

"2. Transportation facilities are usually not too good in a small town. Frequently there is only one railroad and one truck line. This slows up shipments, but this disadvantage may be offset by the time saved in getting shipments on a train or a truck.

"3. Special technical service is seldom available in a small town and it is necessary to go to one of the larger cities to get it. This makes the service expensive and sometimes slower.

"4. The small town offers fewer recreational activities.

"5. It is frequently necessary to make long automobile trips to do the necessary family shopping. We find, however, these trips also provide recreation.

"6. For someone who did not care to take any part in citizenship responsibilities, the small town offers definite disadvantages, because in a small town you are known, and if you have ability you are asked to do things. If someone wishes to lead an entirely selfish life, where he can do exactly what he wants to do without being bothered by anybody, he had better find an apartment in some large city. Then he can gear his life into the city groove and won't even have to bother to say hello to anybody."

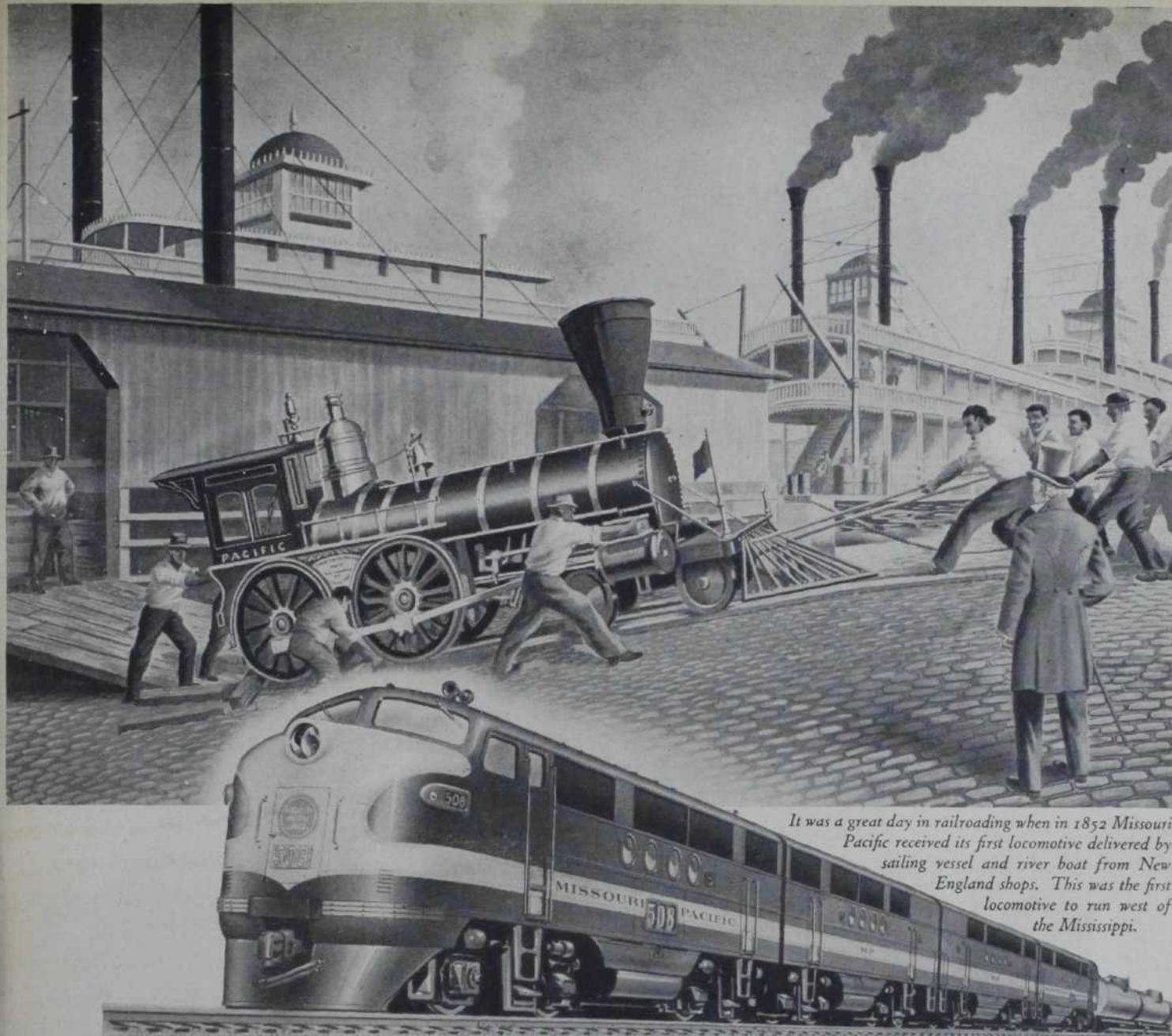
So there you are. The spokesmen for industry in small towns have covered at least the high spots of the case against big cities.

Both have advantages and disadvantages. You pay your money and you take your choice. Industry will continue to do likewise.

THE *Carlton*

RATES FROM \$6

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It was a great day in railroading when in 1852 Missouri Pacific received its first locomotive delivered by sailing vessel and river boat from New England shops. This was the first locomotive to run west of the Mississippi.

Today Missouri Pacific uses a fleet of high powered General Motors Diesel locomotives to haul long heavy loads of oil and war freight, and to provide swift dependable passenger transportation.

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In the things they have done—moving tremendous loads, maintaining fast, regular schedules, always on the job—lies the forecast of a new day for railroading when the war is over. Then the *full possibilities* in Diesel motive power may be applied to the carrying of passengers and freight throughout the country.

That is why it's a great new day for railroading, with greater days ahead.

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ENGINES . . 150 to 2000 H.P. . . CLEVELAND DIESEL ENGINE DIVISION, Cleveland 11, Ohio

ENGINES . . 15 to 250 H.P. DETROIT DIESEL ENGINE DIVISION, Detroit 23, Mich.

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BRUSH COMPANY
522 N. 22nd St., Milwaukee 3, Wis.

A New Road to Labor Peace

(Continued from page 26)

a transient curtailment of our liberties. They are part of a great cosmic trend. If these forces are not met by some adequate counterforce which will arrest or at least divert them, we are on the high-road to all the tyrannies which our forefathers fought to escape.

The world's history is replete with similar instances. It was for economic security that the people of Egypt surrendered their liberties in Joseph's time. The full granaries and the lean years forged the chains of Pharaoh. Corn brought from the provinces and distributed by consuls and tribunes subverted the liberties of the Roman people.

When we view the subject of labor relations in this light, it becomes more than a mere plant or factory problem. We begin to see the deep cosmic significance of all that is going on around about us, of a people willing to sell its birthright for a mess of pottage, of men disposing of hard-won freedoms to gain petty and temporary advantages. This surrender of liberty to government is one of the most dangerous trends in our times.

Labor hopes to become the master. I fear that here, just as in Germany, it will become the slave unless there is a change in policy.

A new understanding

HOW is the trend to be corrected? To my mind there is only one way. That is through the development of a new understanding between the employer and the employee.

That may sound trite—but all the eternal verities are trite. You will find the same admonitions in the Psalms of David, in the Sermon on the Mount, in the Apostle John's immortal 14th and 15th Chapters, in Paul's Letters. It is the great principle that democracy has struggled to establish through all the centuries: that men can only live at peace together and share the blessings of liberty if they recognize that each is his brother's keeper.

Let us be frank in admitting management's faults. We have made many mistakes, probably no more than labor has made or is making, but we must assume our share.

Psychologists tell us that the roots of reason are found in the emotions. The emotion that stems from insecurity is fear, a negative emotion. One negative is inclined to translate itself into another negative. Thus, fear soon is translated also into hate—hate for what is believed to be the source of the fear. As we are all well aware, there was actual hatred in the hearts of many for the American business system during the great depression.

Unfortunately, there were certain

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As every foundryman knows, when molten brass is ready for pouring, the quicker it is cast the better the casting—and the same is true of ingot.

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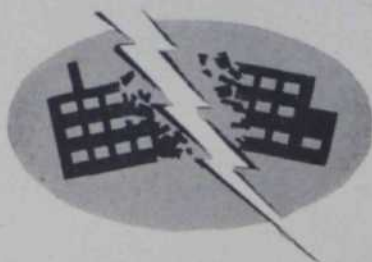
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THE impact of estate taxes on the owners of private companies is often so great that it may well be described as "Tax Lightning." The best financial "lightning rod" that can be built to ward off this misfortune consists of ample liquid capital and an established market for equities in the enterprise.

In recent years the owners of many a family-owned company or closely held corporation have found that by distributing *part* of their holdings to the investing public, they have made the whole enterprise stronger, more flexible, more *stable* for the future.

Those who control well-established companies and who may be considering partial sale of ownership are invited to consult with one of our partners. As investment bankers with broad experience, we are in continuous contact with markets and conditions, and will be pleased to discuss particulars such as recapitalization, correct pricing and the pattern and timing of distribution.

Since January 1944 this firm has raised new capital through public offerings for the following corporations:

ATLAS PLYWOOD CORPORATION
Noted maker of plywood packing cases.

DIANA STORES CORPORATION
A chain of 26 women's apparel stores in the South Atlantic States.

NATIONAL CONTAINER CORPORATION
A leading maker of kraft pulp, kraft paperboard, corrugated and solid fibre shipping containers.

THE DRACKETT COMPANY
Manufacturer of chemicals, including the household cleaning products "Drano" and "Windex"; also soybean oil and oil meal.

BUFFALO BOLT COMPANY
89 year old manufacturer of nuts, bolts and rivets.

ALLEN B. DOMONT LABORATORIES, INC.
Prominent in the field of television, manufacturer of electronic devices and radar equipment.

SOLAR MANUFACTURING CORPORATION
Maker of electrical appliances for industrial, radio and household fields.

FRANKLIN STORES CORPORATION
A chain of 52 women's apparel stores in Texas, Louisiana, Mississippi, Oklahoma, Arkansas and Minnesota.

AMERICAN PHENOLIC CORPORATION
Manufacturers of precision parts for the electronic and aircraft industries; also plastics for electrical and industrial uses. Trade name "Amphenol."

VAN ALSTYNE, NOEL & Co.

Members

New York Stock Exchange New York Curb Exchange

52 Wall Street, New York (5)

theoreticians who added fuel to the hatred of the system of competitive capitalism, who encouraged and stimulated this hatred, and deliberately fanned the flames of popular discontent.

It will be *our* responsibility in the world of tomorrow to replace the negative emotions of hatred and fear with the positive emotions of confidence and hope. Those positive emotions will spring only from a feeling of security on the part of the people.

Hence I am convinced that a floor under income is the next important economic advance in this country. Business, profiting by the mistakes of the past, must take the initiative in developing a sound program for creating such a floor. It is certain that if business fails to exercise this initiative, the politician, through the medium of government, will. Business will have lost one more opportunity to establish itself in public confidence as the creator of that "land of plenty" which characterizes America in the eyes of the people of the world.

Business built America

THE business men of America made this country what it is. We developed the civilization, the methods, and the practices, the speedy conversion of raw materials into finished goods, the marvelous facilities for distribution at low cost that has given this country a standard of living far beyond that which any nation ever possessed. Unfortunately, having accomplished these benefits, we rested from our labors. We were content to let the machine we had created roll, neglectful of the fact that the human factor is always present and that human skill and supervision are necessary to keep the machine functioning. We made no provision for breakdowns. When a breakdown occurred in 1929, it caught us flat-footed, bewildered, confused, uncertain of what to do. That is when the politician seized leadership, and leaders of organized labor wrested the initiative from us.

To recover that leadership, we must be forward-looking. We must have definite, concrete plans for accomplishing the purposes we foresee as essential to a well organized society in this complex urban mechanized civilization of ours.

It has always seemed strange to me that corporation executives should pay such close and careful attention to their annual depreciation accounts, weighing each factor that makes for inutility or obsolescence, calculating the life of each machine and providing for its replacement when the proper time comes, but ignoring the human factor.

Maintenance of a proper depreciation account has long been considered the essence of good management. Yet corporation executives have largely neglected a far more essential item that makes for success in our respective enterprise, that is, the human element. Rarely does one see a balance sheet that properly reflects a depreciation of this human element, that makes an

annual charge off for services that a particular individual, be he worker or executive, will no longer render; that recognizes that time is as remorseless in dealing with men as with machines, and that some day this highly valued employee with all his skill and knowledge must be replaced.

We speak academically of "obsolescence in management" just as we speak of "product obsolescence," but we do nothing about it from an accounting standpoint. The time has come when good corporate practice, as well as sound labor relationship, demands that we evaluate this factor, make proper provision for it, and enter the cost in our operating expense and balance sheet.

One last thought: What is advocated would be of little account unless contemporaneously a better understanding is sought with those whom we employ and their accredited representatives. By this I mean organized labor.

To my mind, there is no substitute for the conference method, particularly the conference where each individual has an equal voice and an equal opportunity to express his opinion; where consideration is shown and gentility is the keynote of the assembly. Patience, tolerance and understanding can accomplish miracles.

There is much to undo, many failures to atone for. But only a resolute turn about and a daily advance on the new road will enable us to pinch off these salients of hate and misunderstanding and create a new atmosphere under which the private enterprise system may once more thrive and function. Only in this way can we build the democratic America that we desire to hand down to our children.

This is our solemn obligation, an obligation to which business must rededicate itself NOW.

How Russia Trades with Us

(Continued from page 48)

allotment, subject to the approval of the State Department, War Production Board and other agencies concerned. Only slightly more than half of \$6,000,000,000 which it has received under lend-lease, was munitions.

Under lend-lease in the past fiscal year, the U.S.S.R. received \$1,100,000,000 worth of industrial materials and \$600,000,000 of agricultural products—in addition to \$1,700,000,000 of war munitions—which indicates its consuming capacity. Using Amtorg's average purchases over 20 years as a yardstick, the Soviet Union has received as much in industrial and agricultural products in three and a quarter years under lend-lease as it would normally buy in the United States in 49 years.

Before the commission appeared on

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your product can be improved with a Kimpreg* Surface

A revolutionary new alloy-like material is achieved by fusing to plywood's surface a cured plastic skin of KIMPREG. This resultant material is not a plywood in the ordinary sense, not a conventional plastic laminate. It is a brand new, better structural medium with countless applications in many products—including, very probably, those you plan for post-war production.

With KIMPREG, plywood is converted into an improved substance which can be machined, formed and fastened like ordinary wood—yet has a plastic's smooth, tough surface and beautiful, permanent, paintless finish.

KIMPREG adds the following advantages to plywood: 1) increases durability and

flexural strength; 2) provides resistance to moisture and vapor; 3) armor-plates against extreme abrasion; 4) prevents surface checks; 5) diminishes grain-raising effects; 6) makes the material scuffproof, splinter-proof, snag-resistant; 7) affords a stain-proof, washable, "wipe clean" surface; 8) creates resistance to chemical action, decay, temperature-extremes, fire, vermin, and mold. Moreover, it is warm to the touch, does not have the chill "feel" of metal surfaces.

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Most folk, this winter, are remaining at home and for them we are happy to provide "packaged" Florida sunshine—golden citrus fruit and fresh grown vegetables in bountiful variety—brought speedily and regularly by Seaboard's crack freights—the *Marketer*, the *Greyhound*, the *Red Fox*, and others.

Whether you come to Florida or stay at home, the Seaboard Railway—*winter's two-way road to summer*—is always the dependable link between you and the delights of this magic clime.



SEABOARD

RAILWAY

THROUGH THE HEART OF THE SOUTH

the scene, Amtorg had tried to place a \$200,000,000 order for three battleships and 30 16-inch guns. The Carp Import & Export company took over the negotiations, another of those strange ramifications of Soviet trade, and the Munitions Board authorized \$10,000,000. Samuel Carp is a brother-in-law of Premier Vyacheslav Molotov.

The future of the Purchasing Commission is uncertain. It is understood that our Government has indicated that materials which are not strictly for war purposes do not come under lend-lease but must be bought for cash or credit. It also is probable that the lend-lease agreement in which the Soviet Union subscribed to the principles of the Atlantic Charter will expire when the war ends. As it is, Moscow has not signed the protocol extending it over the present fiscal year.

Plans for bigger trade

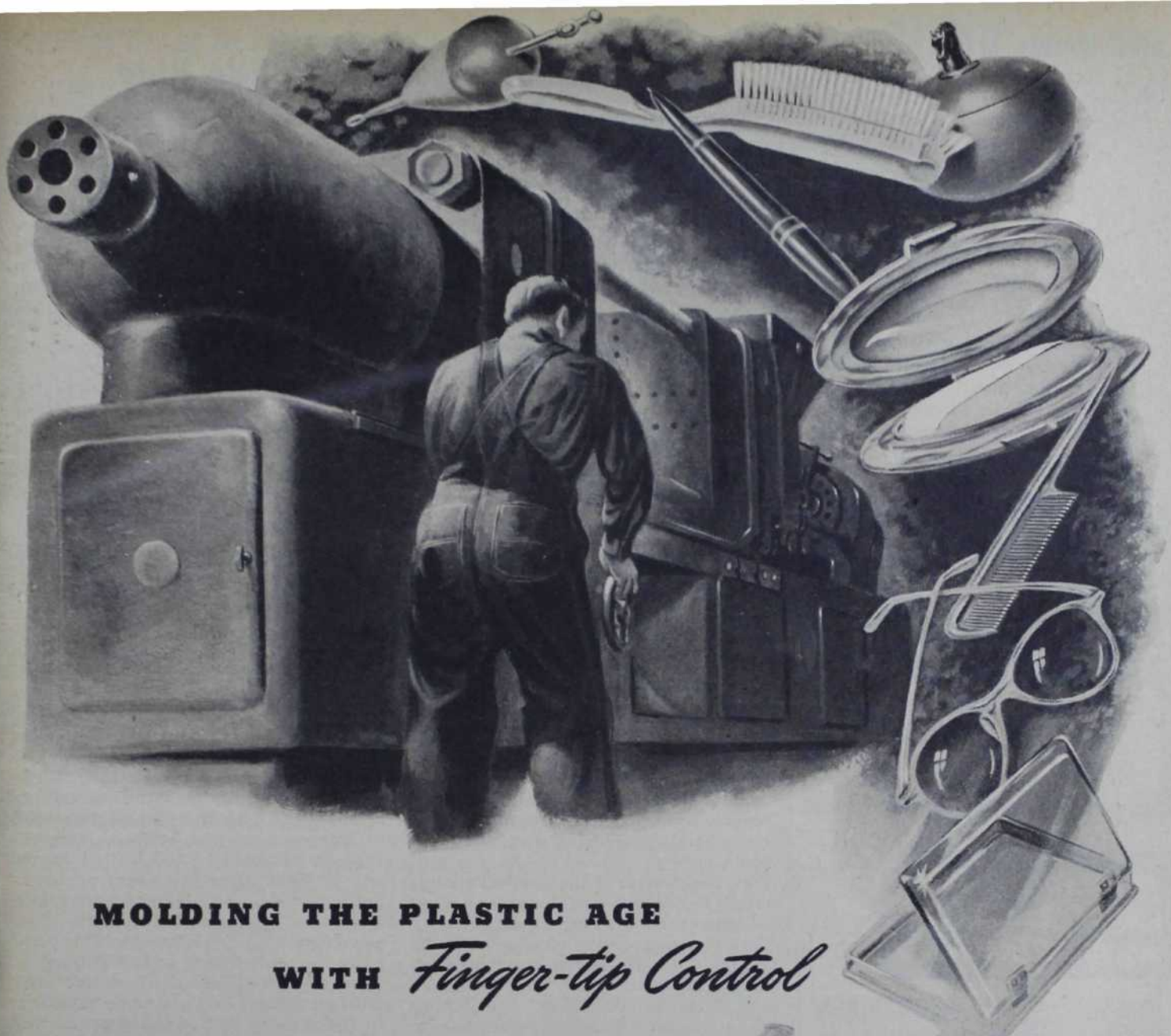
THE two Governments are now discussing plans for financing the Soviet's anticipated large excess of purchases over exports to this country. A government loan has been suggested. Another suggestion is that the Export-Import Bank with increased capital, finance American trade. In 1933, the Reconstruction Finance Corporation made a loan of \$4,000,000, the first of that nature, to cover cotton sales to Amtorg by Anderson, Clayton & Co. of Texas and by George H. McFadden Company of New York. Before lend-lease operated, R.F.C. granted a \$50,000,000 loan while our Treasury lent \$30,000,000 and offered more.

The future means much to American business and government will help as it has in the past.

The present commission, or a similar organization could take over the work of Amtorg. With diplomatic relations now established a commission and its representatives would be exempt from taxes, could not sue or be sued in court and would have other privileges. Moscow may prefer that. However, our State Department has been adamant against permanent commissions in the United States. There is no indication that its policy has changed and, without State Department consent, a trade commission is out.

On the other hand Amtorg, though staffed with Soviet citizens, is an American corporation amenable to American laws. American business meets it on an equal footing. It also has been satisfactory to its owner, the Soviet Government. A few weeks ago, Amtorg signed a lease for 250,000 square feet of floor space in another New York building. All indications are that it is headed for a longer and richer life.

But, whether Moscow does business in the future through Amtorg or through a commission—or through both, one for private business and the other for trade with our Government—the facilities for trade with the Soviet Union will be here for the American business man.



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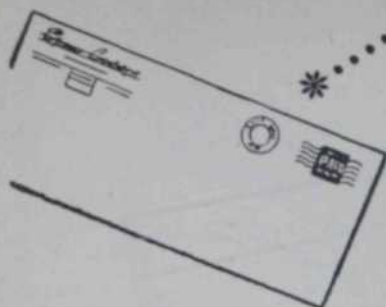
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AMERICA'S FINEST YEAR 'ROUND CLIMATE

Common Sense is His Slide Rule

(Continued from page 31)

this end—good. If not—no dice. Management at the Syracuse plant tries to keep on its toes and to make changes before employees ask for them. It does not always work out that way, but the average is pretty good, and Mr. Wampler himself sparks other executives into keen observance of things that are wrong and can be corrected.

Syracuse winters being what they are, spring thaws make walking conditions considerably less than ideal. Carrier's factory yard, through which employees enter and leave, was no exception. One day Mr. Wampler asked the Works Manager to take steps to lay a sidewalk that could be kept clear and dry. That same afternoon the union chief called him:

"We think something should be done about conditions out in the yard. . . ."

"The boss beat you to it," laughed the Works Manager. "An order for a new sidewalk was put through this morning."

The men study business

AN end product of the new attitude in the plant is the Carrier Institute of Business. It came about through the desire of the men to know more about business in general as well as of the Carrier business in particular. It is unique and successful and the idea should spread.

But the genesis of the over-all change may lie in the fact that Wampler was an investment banker before he went to Carrier's as executive vice president in August, 1941. He is not a scientist although he deals every day with scientists. He is not an engineer, but an administrator. As an investment banker he had been compelled to dig for bottom facts and causes. He could not recommend a bond to a prospect unless he knew what was behind it.

The Carrier Corporation had tenanted space in a Chicago building owned by Wampler's firm. In the early days of the depression the Corporation wanted to relinquish a part of this office. Times were hard and getting harder and a curtailment of expenses seemed advisable.

"Perhaps that isn't the answer," said Wampler. "Let's have a look."

A squad of young men was sent into the field to inquire of the users about air-conditioning equipment. They knew nothing about the Carrier Corporation. The replies were highly favorable to the company, but there was the inescapable fact. Fewer prospects were in sight and sales were falling off. The Corporation's sails might have been trimmed to the slackening winds; he chose to go to the Corporation and increase its sales.

He became interested in Carrier and its potentialities. Visited their home offices, then in Newark. Got to know the

officers. It wasn't long before he was asked to become a member of the Board of Directors. That was in 1935. An active director, he became a member of the Corporation's executive committee and then chairman of its finance committee. Then in 1941 he gave up his other interests and moved to Carrier full time. On the death of J. I. Lyle, one of the founders, he became president in 1942.

Back of him—still delving into that genesis—were the shaping factors of a literate family, not too much money, a small town, a small college, and the Army. His father had been superintendent of schools in Hallsville, Ill., until he tired of schoolteacher's pay and bought a shoe store. The son remarks with pride that his father made it pay.

Cloud Wampler—his mother's family name was Cloud—was born June 7, 1895. He wanted to go to Williams College, but the money did not stretch that far, and in 1916 graduated with the degree of Bachelor of Science from Knox College, Galesburg, Ill.

When the United States entered the First World War he volunteered and after basic training was transferred to the Intelligence Corps of the 86th Division, first with the rank of first lieutenant and then as captain. He wrote the course of instruction in military intelligence which was used in the 86th Division and later served with the 41st Division G-2 in this country and France. Early in 1919 he returned to the United States and in 1929, after ten years of banking experience, became associated with Laurence Stern and Company, Inc., as vice president and director. This company became Stern and Wampler in June, 1938, and he was its active head until he joined the Carrier Corporation. In 1942 he was elected to the presidency of Carrier.

A strong, friendly voice

IT MAY be heresy on the Codfish Coast but it may also be that this is an advantage in dealing with men. He has a strong, friendly voice, and on occasion he is not afraid to let it be heard. He is a good, two-fisted speaker, either on full dress occasions or when he unbuttons his vest and debates with the members of the Institute of Business. He curses a little, mildly, never dragging in a needless "damn" to spoil the pattern.

He likes to play horse a little for his own internal amusement. On one occasion someone gave him the king of all slide rules. It was big, long, and handsome, and Cloud Wampler had not the least idea how to use it. No one knew that a slide rule is perhaps more unintelligible to him than a Norden bomb-sight.

At the next formal meeting of the scientists of the Carrier Corporation, a list of highly intricate questions was offered for the scientists to solve.

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Philco looks upon this overwhelming vote of confidence as an obligation and a challenge. Its record of the past is your promise for the future. The research laboratories whose achievements made Philco *America's Favorite Radio* will be ready to continue that leadership after Victory.

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Wampler worked them out in advance by the old-fashioned divide, add and multiply plan and kept it a secret. When the puzzlers were propounded to the scientists they got out their individual slide rules and went at their tasks with ardor. Wampler lazily pulled his gilded and engraved mechanism to the edge of the table, punched at it here and there, and announced correct answers before any of the scientists had found one.

"I can still remember the look on their faces," he chuckles. Every one enjoyed the joke.

That gives an idea of the kind of a man Wampler is. No stuffed shirt in his pedigree. Raymond Mahar had an idea one night on his way to the meeting of the labor-management committee. It had been cooking in his mind for a long time, without being precisely formulated, and when he ran across Mr. Wampler he put it on the table.

"The employees," said Mahar, "would be more interested if they knew more about what they are doing. It's all right to pull a lever and punch a press all day long. We get the day's pay out of it. But why not tell us where the stuff comes from and where it is going to and what it does? That sort of thing. Give us the lowdown."

Men make their own study

"FINE," said Wampler. "Why don't you do it, Ray? Let's work this thing out."

Wampler knew better than to attempt to cram any made-up education down the employees' throats. The first impulse of any freeborn man is to gag when anyone tries to spoon-feed him. A committee of employees was named by the employees on the general understanding that they did not want any of the sound-effects about Business and Loyalty and the American Way which usually echo around a meeting of factory men and managers. They wanted to pry open the lid and see just what had been going on inside.

The Carrier Corporation's chiefs had spoken to them from time to time, and experts had been brought in and they had spoken. Some of the speakers had been first rate and some of them gave off the sleeping sickness. So the committee—seven of them, including one girl—transformed itself into the Board of Managers. The employees named the Carrier Institute of Business and manage it to suit themselves. For instance:

The employees may only attend the sessions if they want to learn. No badges, cakes, lapel pins or doughnuts and coffee are given. It is a privilege to be permitted to attend. No one asks anyone to join the Institute. Acceptance was limited to 107 for the first course because no hall was available in which a greater number could be seated. Only men or women who earned less than a certain amount were eligible. Twenty per cent of the eligibles registered at once. By the end of the session so many more applicants had appeared than



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- Locker plants
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- Funeral homes
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- Beauty parlors
- Cheese curing rooms
- Candy factories
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could be accommodated that a rigid rule was made that a single unexplained absence forfeited membership. Only two were dropped from the first course and only one from the second.

The reason for that is, of course, that the sessions of the Institute are interesting.

Mr. Wampler himself was on the grill on one occasion. He was asked to explain some of the more intricate problems of management, and the questioners had him wriggling before he was through. Speakers discuss the problems of American business, and after the formal meeting ends, a bull session is held in which everyone has a chance to talk and ask questions and attack or defend.

Speeches are edited

THE Institute broke into new ground in their relations with speakers. So often had the members writhed helplessly while the brass hats of business wandered away from the subject or were platitudinous or adenoidal or pontifical, that the Board of Managers now insists on seeing each script two weeks before the date of planned delivery. If the speaker is not producing what the Board wants, the script is ruthlessly edited. Sometimes it is thrown away. If a prospective speaker appears impossible he is kissed goodbye. The Board of Managers are sorry, but that is the way it is.

"We come to those meetings to learn something. No hooey wanted."

They take up little things as well as large. Slow service in the cafeteria was improved after it had been considered. Marketing conditions, government relations, the gathering of raw materials, transportation—anything at all that has to do with business. The employees understand the problems management must solve. They are interested in job stability after the war. Therefore they want to know what the company plans to make and do when peace returns. On most meeting nights the leaders give out a written quiz program for the direction of the question period. Management benefits by it as much as the workers.

"We are making improvements here and there in policy, administration and working conditions which had not been made before simply because we had not thought about them," says Mr. Wampler.

If questions and answers offer anything like a true picture, the American workingman wants nothing to do with the regimentation of industry. Relatively few think the Government should be held responsible for job-making after the war. Most want opportunity rather than socialism or communism.

In spite of the mooring of reformers and the mewling of tearful brothers, most think there will be plenty of opportunity if the Government only lets the worker alone. A percentage of 40 decreased to 13 on the proposition that the average American corporation should put more money into wages and less

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Too much of it to talk about now. But Columbia University, backed by Albert Lasker and the Macy Foundation, will conduct research to discover why and how we grow old. Air-conditioned mice will be the live material for the experimenters. They will be raised in happiness that no mice ever enjoyed before, being freed of such annoyances as those of humidity, heat, cold, imperfect ventilation and drafts.

Comfort for machines and men

THERE would be fewer electronic tubes to purvey magic except that the air conditioners can keep the temperature of the rooms in which they are made down to a comfortable normal. Left to themselves the heat from the tubes would fairly crack the windowpanes. Gun turrets on battleships are kept cool and free of powder fumes, and the ready rooms on aircraft carriers, in which pilots used to sweat miserably in their heavy clothing while being briefed for the next flight, are now comfortable.

A pilot who landed his plane too fast on a smothering and dusty Chinese field was once heartily cursed by the mechanics who had to sweat through the hours patching it up. Nowadays the mechanics work in an air-conditioned shop. Repairs to delicate instruments are made without injury from sweat or dust. Operating rooms in field hospitals have been made comfortable. The X-ray rooms are no longer sweat boxes. Drafting rooms are now air-conditioned. Without air-conditioning, production of the Norden bombsight would be cut by 50 per cent in the summer because the tolerances could not be controlled.

And the rest of us, traveling and living and dining and making love in the good days to come, can do all these things in greater comfort, because the under-the-roof temperature will be just what we want it to be. More work, more happiness, more efficiency and better health!



"How's tricks?"

ONE-TWO PUNCH

THERE's always satisfaction in doing a job your fellow men find good.

There's something more than that when not one but *two* of your major efforts turn out to have rung the bell with those in position to know.

Buick powers the Liberator — builds the big, valve-in-head Pratt & Whitney engines that give the B-24 its range and speed.

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But what pleases us are the words of gratified comment that drift back to us from users of *both* of these war items.

On land and in the air they are helping deliver a "one-two" punch that hits the enemy where it hurts — and our boys like that.

Hundreds of their letters have come to us. And if we may sum up what they say, the comment seems to be that Buick's on the ball in turning out the sort of stuff our fellows want.

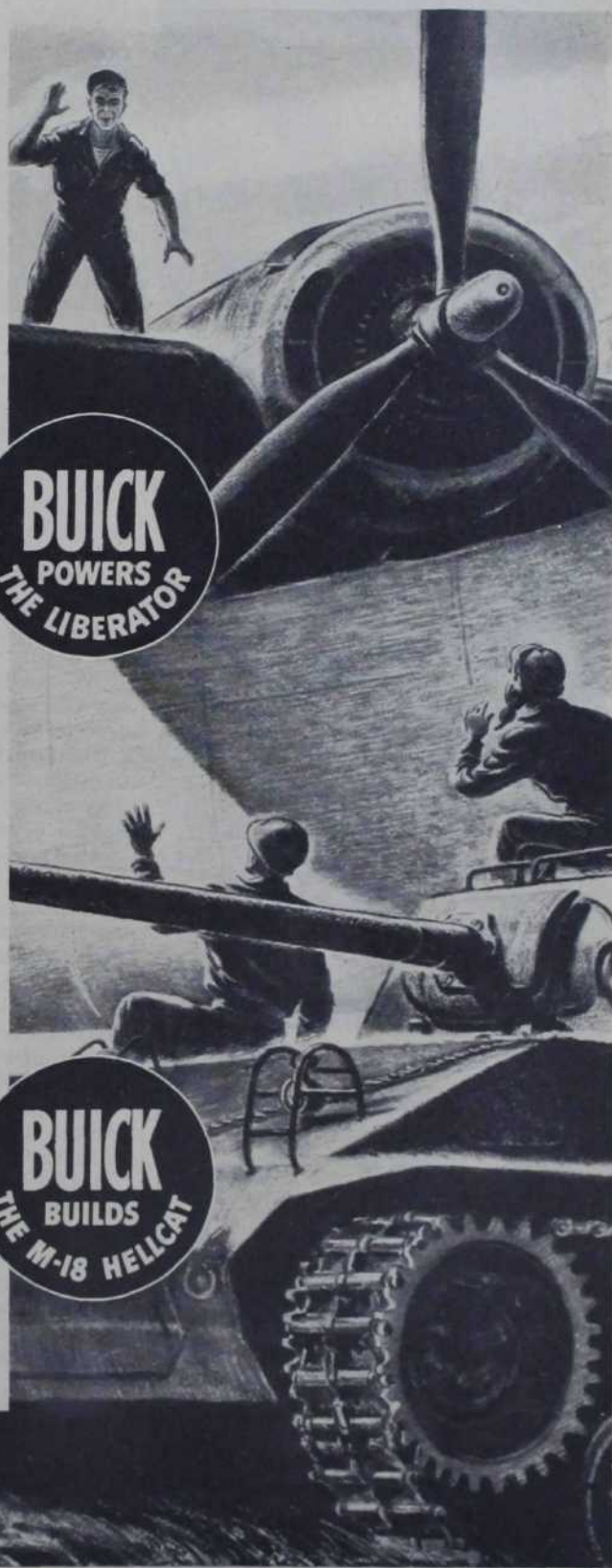
To us, that's plenty high praise from a plenty high source.

For in view of their deeds, we'd rather "rate" with that bunch than almost anything else in the world!

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Make Way for the Little Man

(Continued from page 30)

and ambition, another with money, still another with job training—all held back naturally and normally by fear.

At the same time each is urged on by hope—the hope that each may profit if he takes a chance.

Real postwar planning, therefore, should start with a determination to set up the social, economic and political conditions which give ambition the edge in the constant struggle between our hopes and our fears.

But those conditions must be built on today's realities. It will do us little good to hark back to the time when Thomas Edison, Henry Ford and John Wanamaker started their business ventures. Entering business today is a great deal different than a generation ago.

The heavy hand of taxes

FOR example, in setting up the basic conditions for the future, we must recognize that taxation is more burdensome on all ventures than 30 years ago. What is the cure for that? To reduce all taxes to the level of those days? A good idea, but hardly practical.

We shall be better advised to adjust our tax system to give the new venture certain tax advantages or exemptions until it is firmly established. Incentive taxation—a field still to be explored—may enable us to raise more geese to lay golden eggs.

Another condition we must establish for our new business enterprises is easier access to working and investment capital. Here again, times have changed. Twenty years ago I borrowed \$35,000 from a banker to buy another business which would supplement the one I had started a few years before. He made me a character loan against total assets of only \$10,000.

That particular banker was an owner-banker. He had full authority to take risks and possible losses.

Many bankers will tell you that the same service would be available nowadays if it were not for our strict new banking laws. To some extent that may be true, but it is far from the whole answer. There is still room in banking and finance for imaginative, aggressive management to meet sound business needs.

Such opportunities do not walk into a bank. They must be created. They have little or nothing to do with legal requirements which make deposits safer and management more responsible. Rather they depend on the mental approach of our top banking policy makers. If their attitude is that a bank is just a vault, there can be no real service to borrowers.

From my own current observations as a borrower and as a bank director, I believe the emphasis in most banking organizations is on the wrong place today.

Today I know I would find not my owner-banker friend, but a branch manager. With the best will in the world, he could not take the risk himself. He would be obliged to send notes, collateral and credit statements to an executive vice president several hundred miles away. Being human, the branch manager would get more comfort out of fingering \$70,000 in collateral than in looking into my hopeful eyes.

The result? I doubt if I would try today to borrow that \$35,000 to expand my little business.

There is still more to incentive than cheap money or low taxes. Men, particularly young men, want recognition. Our newspapers are most resourceful and energetic in getting the picture and the story about young Jones, who graduated from Siwash in 1932 and has just been elected second vice president of a large corporation.

But how about some news of young Mr. Smith, who has put his life's savings into a venture of his own, who is going to work at half as much salary for the next few years, and is paying rent, taxes and wages in a new business? I have a feeling that he is fairly newsworthy, too. At least, I do not think he rates a headline only if he fails or at long last becomes a trustee of the local hospital.

Good business helps us all

STILL another condition for the future is a matter of concern to all of us. I am glad to know that our big corporations have passed out thousands of subcontracts during this period of national emergency and war. I shall be even more interested in figures of subcontractors in the days of peace. I shall hope to see thousands of small businesses doing similar work for the giants of industry, for then I shall know that industry is showing statesmanship. It will then be clear that the leaders of our great national enterprises realize their long-range prosperity, as well as their next dividend rate, depends on the spread and growth of economic activity and opportunity for all.

In the same spirit, the managers of our great corporations will take a direct interest in making materials and services available to their small business customers on favorable terms and costs, and with the same eager service they accord to their largest and most desirable customers. Then again, it will be plain that big business discourages monopoly as a matter of statesmanship and foresight.

Let me emphasize that I am not proposing or recommending an industrial feudalism provided it is kept benevolent and generous. In my own business I am perfectly willing to subcontract for other and larger companies but I want and intend to keep a place and maintain an identity in competitive markets.

When I look at the tremendous productive capacity of our factories and farms—45 per cent higher per man hour than in 1929—it makes only common sense to me that we should encourage thousands more, not fewer, independent small enterprises to help distribute that production to our own people and to all who can buy it abroad.

Government has moved into fields of private business enterprise to an astonishing degree in the past 15 years. Men have seen many sinister meanings in this development. It has been called Socialism, Communism, betrayal of the Constitution and of the Bill of Rights.

Business must meet our needs

WELL, perhaps it is simpler than that. Every school boy is taught that nature abhors a vacuum. He performs experiments in physics to show how air will rush into a complete void. If we apply the same principle to our economic and social life, we will come out with this parallel: Government rushes into any field where individual initiative and enterprise fail to meet a social or economic need.

It is the task of our business men to help prevent these economic vacuums.

I have touched on only a few of the subjects involved in our basic postwar planning. There are many other factors in a vibrant, expanding economy. One other is perhaps worth emphasis:

In all fairness we must admit that, more than anything else, business volume solves more problems than we do. There is a point in volume where almost anything we try succeeds, and a point where nothing we might do would pay a dividend.

Volume in business depends on the hopes and fears of our customers, our workers, our associates and our competitors.

It is good statesmanship to devote some time each year to the common problems of business. Through his chamber of commerce and his trade association any manager of a business can do much to heighten the hopes and reduce the fears of his fellow managers in commerce and industry.

It is equally good business statesmanship to sit in with the leaders of agriculture and labor on our general problems. They, too, represent much of our business volume. Their hopes, fears and misunderstandings are equally a part of the conditions under which America must work.

So we come back to the simple premise: We can let the gadget improvements take care of themselves if we establish now the basic conditions which encourage people to work, to restore and to put their new skills and efficiency to use.

We must have more people going into business than ever before. Yes, and more people going out of business, too. The birth and death rates of business cannot, and should not, be controlled if we are to preserve political and economic democracy.

FACT OR FICTION? A 47-SECOND QUIZ ON THE TREASURE STATE

1 CAPTURE OF BUTTE, MONTANA
AND 25 SQUARE MILES AROUND THE CITY BY AXIS FORCES, IN 1941, MIGHT HAVE CRIPPLED U.S. WAR PRODUCTION. **FACT OR FICTION?**

2 PORTABLE PONDS CAN MOVE RIGHT ALONG WITH THE GOLD DREDGES, IN MONTANA. **FACT OR FICTION?**

3 SAPPHIRES MINED IN MONTANA ARE USED AS TRADE GOODS, IN THE ARMY'S DEALINGS WITH SOUTH PACIFIC TRIBES. **FACT OR FICTION?**

4 SOFT-DRINK SHORTAGE MAKES AXIS WAR LORDS COVET MONTANA'S PHOSPHATE ROCK DEPOSITS. **FACT OR FICTION?**

5 EXTRA WIDE RIGHT-OF-WAY GAVE NORTHERN PACIFIC ITS NICKNAME "MAIN STREET OF THE NORTHWEST." **FACT OR FICTION?**

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- 2. Fact.** Dredges can dig passages ahead, fill them up behind, thus pull their ponds with them. Northern Pacific has carried huge fortunes in gold from Montana mines.
- 3. Fiction.** As jewel-bearings in precision apparatus such as bomb-sights, sapphires have priceless value. N. P. carries Montana's sapphires to war plants.

- 4. Fiction.** Not for soft drinks, but for making steels, medicines, explosives, the Axis greedily covets America's phosphate rock. Phosphorites from Montana-Wyoming-Idaho reserves (by far the world's largest) are hauled in quantity by N. P.

- 5. Fiction.** This famous slogan means that Northern Pacific links the largest number of important population centers in the Northwest states.

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NORTHERN PACIFIC
Main Street of the Northwest

Her 1,000 Acre Salad Bowl

By HAROLD SEVERSON

WHEN she was very young, Ruth Wedgworth pulled an occasional weed from her dad's garden in Michigan—but only under protest. To her, gardening was a distasteful chore. Today it's a different story. On her large farm in the Florida Everglades she grows vegetables by the hundreds of acres. She measures production by carloads, not bushels.

Mrs. Wedgworth did not wait until Pearl Harbor initiated a nation-wide drive for millions of victory gardens. Years before food production became a paramount interest to backyard farmers, she was growing vegetables on a scale unmatched by any other feminine grower, either in this or foreign countries. In laying out her plans for this season's production, she set aside 400 acres for Irish potatoes, 175 acres for celery. The rest of her 1,000 acre farm went into cabbage, escarole, peas, corn, sugar cane, and pasturage for fine steers being finished for market.

F. Emory Sharp of Bradenton, one of the state's best known growers, recalls vividly the trying days Mrs. Wedgworth faced after her husband's death in October, 1938.

"We watched her face the many complex problems in the business," he said recently. "Frankly, it seemed to all of us an impossible task for this little woman to carry on with the big business and her three small children. But she persevered. We watched her gradually develop into a master scientific farmer."

"She has made all Florida proud of her."

There are other major vegetable growers in Palm Beach County. County Agent M. U. Mounts lists 15 who farm from 1,000 to 3,000 acres. But, he points out, the difference between these producers and Mrs. Wedgworth lies in the completeness of her operations: farm, packing house, and fertilizer plant. Statistics he has gathered show she is one of the largest growers of the nation. This Florida county is the largest vegetable producing county in the United States and it is doubtful whether there are



RUTH WEDGWORTH, scientific farmer, conquered the Everglades and taught swampland to grow vegetables

many areas in the nation where agriculture is so thoroughly industrialized.

Mrs. Wedgworth, dark-haired, small, and slender, makes the whole complex business seem as simple as operating a country grocery store. She makes her decisions quickly and makes them stand. Her knack for picking skilled foremen has paid real dividends and her employees have a high regard for her judgment. She attributes much of her success to the group of men who have worked with her to increase the scope of the business.

Over at the nearby experiment station, Dr. R. V. Allison lists her as one of the comparatively few growers who

seek technical advice. Some growers are inclined to disregard experiment station findings until more progressive producers have thoroughly tested them. Mrs. Wedgworth tests them. By following the recommendations of the trained scientists, she has been able to operate with a minimum of trouble. Perhaps it's because her husband was once a member of that staff.

Bacteria to plants

MRS. WEDGWORTH was a Michigan girl, who had aspirations to become a hospital bacteriologist, until one morning she looked up from a chemistry bench at Michigan State College and into the laughing eyes of Herman Hamilton Wedgworth. He was a Mississippian doing graduate work in plant pathology. When he returned to Mississippi State College, she went with him as his wife. From Mississippi they went to Cornell University and then, in 1930, to Belle Glade, Fla. There he began a new phase of work as an associate plant pathologist at the Everglades Experiment Station.

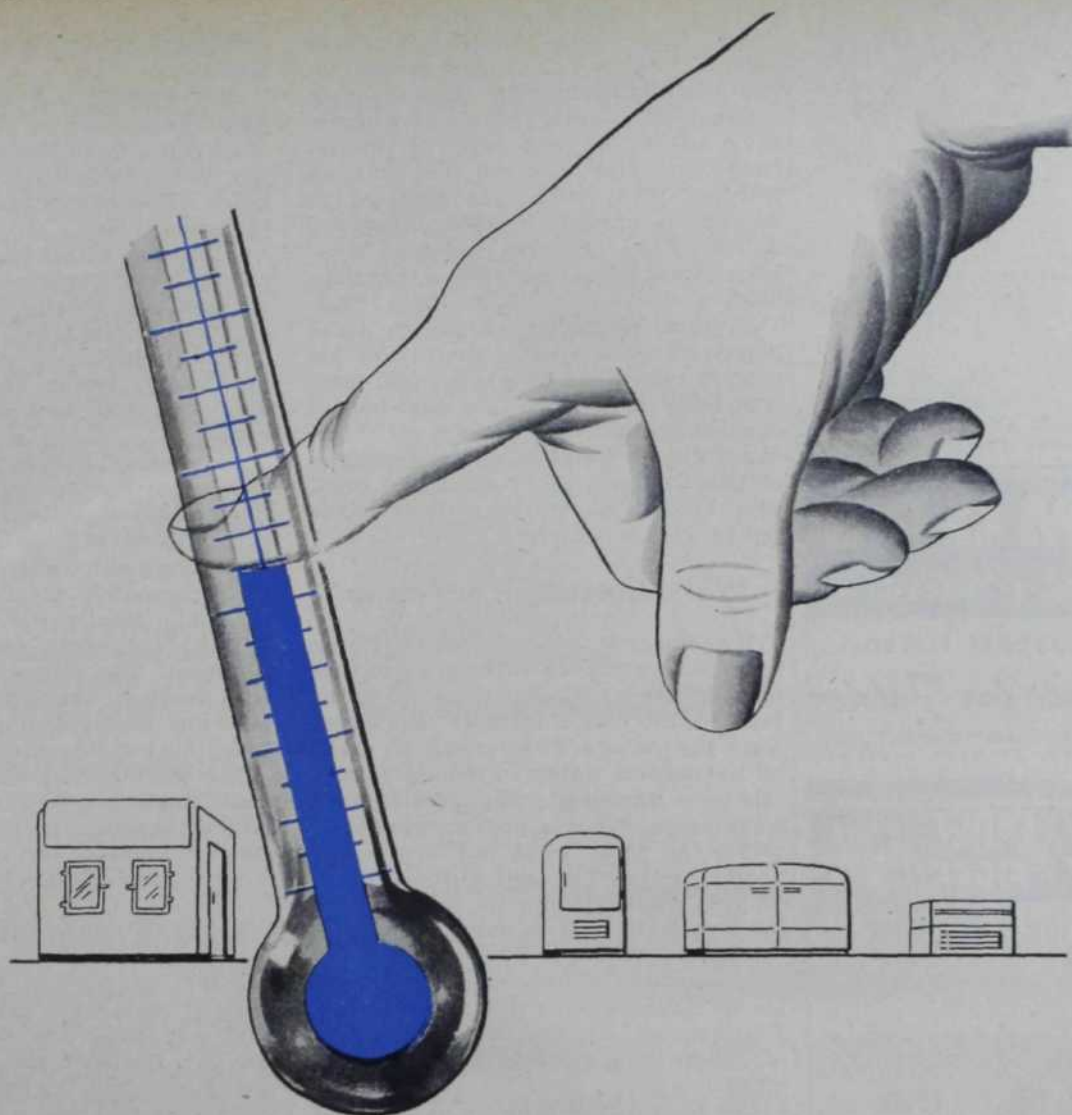
At that time the 'Glades were covered with sawgrass, willows and elder trees. Early settlers had drained portions of the huge swamps and attempted to control the water level. The muck soil was tremendously fertile, but mineral deficiencies handicapped farmers. One of the most important

findings was that by Dr. Allison who demonstrated that the hitherto unproductive soil could be greatly improved by the application of copper sulphate.

This finding was shortly followed by Mr. Wedgworth's contributions which showed that the yellowing and failure of beans on sawgrass soils could be prevented by manganese sulphate, either through spraying or by incorporation into fertilizers.

Dr. R. G. Townsend showed that a deficiency of zinc in the outlying areas could be combated by spraying affected plants with solutions of zinc sulphate.

These three discoveries made it possible to develop thousands of acres of



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B. G. PETERS, Secretary-Treasurer

otherwise useless land. In 1930, the experiment station started working with celery. Today, Palm Beach County ranks second in celery acreage and production in the state, but the first test planting was not made until 1927. It was necessary to experiment with fertilizers, fungicides, and seed bed problems, so Herman Wedgworth was assigned to one of the projects in 1930. When the half-acre plot of celery had been marketed, the check was for more than \$800.

Herman Wedgworth began to make plans. He gave up the security of his modest salary and bought a small farm near Belle Glade. Their friends at the experiment station were skeptical. Most experts argued that only a small portion of the vast expanse of muckland could ever be farmed. But the Wedgworths fell to work with a will.

Water becomes a handicap

THE problems were serious. Farming in the Everglades is different from that of other areas. Heavy rains flood the farm country and farmers depend on huge pumps and large canals to carry off the surplus water. In the early days, "shotgun farming" was practiced in some areas. When a grower wanted to retain the water level at a convenient height, he armed himself with a shotgun to keep his neighbors from regulating the level to their advantage.

In dry seasons, great fires sweep the unused land and burn the peaty soil, the smoke causing some damage to crops. Furthermore, the soil itself has a way of disappearing gradually as a result of oxidation.

But the greatest problem of all in the early 30's was the lack of a good market.

Warnings were croaked to the Wedgworths and, that first year, were justified. The Wedgworths had 80 acres in celery. On paper, their profits were impressive. Then a ten-inch rain flooded their farm and ruined much of their crop. To make things worse, the banks closed and markets were worse than poor. They were awful.

The Wedgworths only gritted their teeth. It had taught them a lesson about keeping all their eggs in one basket. The next year they cut their celery acreage to a fourth, and planted 40 acres of Irish potatoes. A good crop and a reasonably good market greeted them.

The Wedgworths were an unusual team. His brilliant intellect and driving enthusiasm were balanced by her cool judgment and ability at detail work. When Wedgworth planned a vast agricultural empire covering thousands of acres, she arranged for loans, met the pay roll, operated the home, and took care of the children. Each night they outlined their next day's plans.

They bought their second farm in 1934 and it was her initiative and energy that made it possible. The Wedgworths had an option on the land but, before they could reach an agreement, one of the two owners left for northern Michigan. The Wedgworths were in a quandary.

The time limit would soon expire. Working fast, they obtained his post office address, and Mrs. Wedgworth went to find him.

Driving night and day, she reached a little resort town on the shore of Lake Michigan only to find him gone. Detective work disclosed he was at Crystal Lake, a hamlet that serves resort people for a wide area.

"It seemed rather hopeless," she commented, "but I kept searching and asking questions. Finally, I found him about 8 o'clock at night. By 10 o'clock he had agreed to sell at our price, so I hunted up a notary public, had our signatures notarized, and was on my way back home."

As a result of her work, they were able to buy and develop the land in time for the 1934-35 season.

In October, 1938, an ice machine which Mr. Wedgworth was helping to install at their precooling plant, slipped and injured him fatally.

Mrs. Wedgworth faced a tough assignment. The property was burdened with heavy government loans which had to be met. Straightening out the account took time but did not end her difficulties.

The weather was still a hazard. She made financial sacrifices to install expensive drainage pumps and motors so efficient that she can pump off several inches of rain inside of 24 hours.

Packing plant for vegetables

TODAY, in addition to growing carloads of vegetables, she packs and markets her neighbors' crops. She has her own fertilizer and insecticide mixing plant, a packing house covering 48,000 square feet, and a precooling plant. More than 1,500 carloads of vegetables were shipped from her plant in 1943. When the War Food Administration sought recipients of its "A" award, it picked her county. Fellow growers selected her to accept the award.

Farming is not her only interest. She was a delegate to the Democratic National Convention last summer. In addition, she is a director of the Florida National Bank and the Everglades Memorial Hospital. Somehow she finds time to keep up with the activities of her son, George, and is on hand when the youngsters scrap for touchdowns and glory on the Belle Glade gridiron. One of her daughters, Helen Jean, is married but 12-year-old Barbara is still under her mother's wing.

Right now, the immense packing and precooling plant is humming with activity as more than 200 employees unload, grade, wash, pack, precool and load vegetables into railroad cars or trucks for markets all over the country.

Long trainloads of refrigerator cars roll from her sidings carrying produce with the "Big W" brand to the dinner tables of the nation and to lend-lease countries as well. Marines fighting on Jap-held islands, GIs in Germany, and sailors on all the seven seas are eating Mrs. Wedgworth's vegetables grown on a one-time mucky swamp.

Test Tubes Keep America Young

(Continued from page 22)

down to four or five per cent oxygen content in the finished product—and four to five per cent oxygen still induced rancidity.

When our troops began to spread to far-flung battlefronts—and Army and Navy demands for dried milk and eggs skyrocketed—Canco scientists went to work on a machine which would permit mass production of these needed products. Now the new high vacuum chambers drain oxygen down to three per cent or less in a few minutes, compared with *hours* for the old equipment, and both dehydrated eggs and milk will keep indefinitely without flavor change.

This single research triumph has been of major value to the armed forces, which this year will consume 200,000,000 pounds of dried milk alone, or enough for 1,000,000,000 quarts.

Farmers will be helped

IN the postwar era, dried milk may prove one of our big new industries. In many sections of the South, hundreds of thousands of children of low-income families can obtain no milk at all, largely because of lack of dairies. Yet in the North, almost every year farmers are caught with huge oversupplies of this life-saving food during the so-called "flush" milk period of early summer.

In the postwar era, enormous quantities of milk will be dehydrated and canned—and will sell for around nine to ten cents a quart, compared with 22 cents per quart for fresh milk in many sections of the South. Thus food research laboratories will have solved a double problem—the economic illness of the northern dairy farmer, and the milk deficiency of children in the South.

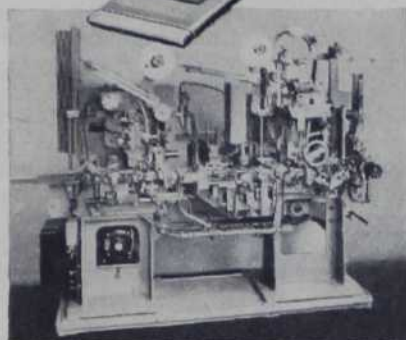
With all the apparent benefits of industrial research, a few hard-headed business men may still wonder skeptically if, in the long run, it *pays*. Du Pont's Organic Chemicals Department provides a spectacular answer to this question. It was formed in the first World War to manufacture dyes, which were a German monopoly. Du Pont soon realized, however, that dye manufacture could serve as the nucleus of a synthetic organic chemical industry. At the end of five years, the company's new division had suffered operating losses of \$18,000,000. With a capital investment of \$22,000,000 in new facilities, du Pont, largely on the word of its research scientists, had laid \$40,000,000 on the line without a penny of profit.

Then things began to move, just as the scientists had anticipated. Gasoline antioxidants created in the laboratory started to make money, so did rubber chemicals, synthetic Vitamin D. Today this department manufactures more than 2,000 materials, and it is one of the



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most successful of du Pont projects. That is one of the reasons du Pont today supports 33 of its own research laboratories, with a personnel of 3,500—as many scientists and technicians as many good-sized companies employ in all departments. It is one of the reasons, too, that Lamont du Pont boldly declared at the bottom of the 1932 depression:

"It is more important to carry out research than to pay dividends."

Certainly the present war has confirmed this. From the Minneapolis-Honeywell Company's original electronic research, for example, have stemmed at least half a dozen electronic devices which have profoundly influenced the combat performance of our fighting planes. Besides the electronic automatic pilot and numerous other electronic inventions still shrouded in secrecy, Honeywell scientists recently invented an electronic turbo-supercharger control which maintains maximum horsepower under all operating conditions—one of the outstanding aircraft developments of the war.

New steels for war

U. S. STEEL, which built its huge central research laboratory at Kearny, N. J., in 1927, has established 173 additional plant laboratories throughout the corporation, employing thousands. One of the company's important scientific contributions to the war has been aid in developing so-called National Emergency steels which utilize the alloys of scrap steel as far as possible. Also of marked war significance has been the work of U. S. Steel scientists in perfecting an electrolytic process of plating tin on steel plate, instead of dipping the plate in molten tin. This saves 60 per cent of the tin formerly used.

Research scientists and engineers in one division of the Bendix Aviation Corporation—Bendix Products of South Bend, Inc.—spent roughly \$10,000,000 in experimental work during the ten years before the war. From this research came the injection carburetor which permits American planes to fly higher and farther by automatically adjusting air and fuel feeds to decreasing air pressures as the plane climbs, hydraulic operated brakes now used in most heavy military vehicles, heavy bomber wheels, and new type struts.

Other divisions of Bendix Aviation spent additional millions in the laboratory to create an astounding array of new products: among them a constant velocity universal joint for jeeps, oxygen regulators for high flying planes, aircraft radios, and the gyro flux gate compass.

Already industrial research has come of age, but a dozen new miracles lie over the horizon for every miracle it has created in the past. If Government and the tax laws permit it to continue to function, freely and competitively, America and the world may well be standing on the threshold of a bright new era of productivity.

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About Our Authors

FOR MANY YEARS we have dutifully answered letters which began: "I was interested in such-and-such article in your magazine and would like to know more about the man who wrote it." But writing such letters palls besides using stationery which might be better employed. Hence this column dedicated to readers who want to know and to the authors who told them.

Ralph Wallace: Is a free-lance writer who lives in New York but is usually somewhere else.

Wendell Knowles: Is Supervisor of Aptitudes Testing for Northwest Airlines, Inc.

O. A. Seyferth: Is especially qualified to speak on labor questions. Now president of the West Michigan Steel Foundry Company and chairman of the U. S. Chamber's Committee on Labor Relations, he is a former president of a labor union and was at one time President of A.F. of L. Trades Council, Grand Rapids, Mich.

Eric A. Johnston: Is, of course, President of the Chamber of Commerce of the United States.

Herbert Corey: Is a former newspaper man and war correspondent. For many years he has kept a tolerant and appraising eye on the Washington scene, turning his observations into magazine articles and books.

Lawrence Sullivan: Is a professional writer, author of several books about politics and business. **Ralph Pryne,** who collaborates with him here, is a California business man.

Junius B. Wood: Is a former foreign correspondent and world traveler who has been practically every place except Gravelly Point just outside Washington. Obviously more at home in a sampan on the Yangtze than in Washington's wartime transportation facilities, he definitely refuses to go there. "I wouldn't go to Gravelly Point to see Hitler chew a rug," he said when we suggested that useful information would result from such a visit.

Paul D. Green: Is a New Yorker who divides his time between accountancy and writing.

Harold Severson: Is on the staff of *Southern Agriculturalist*, a position which keeps him traveling widely and leaves him time for occasional contributions to other publications.

Donn Layne: Is on the NATION'S BUSINESS staff.

How about Reconversion?

ARE YOU PREPARED to train employees for postwar?

Two big postwar problems loom before industry. *First*, speedy reconversion to peacetime production; *second*, training for efficient, economical selling. Both problems call for Illustravox.



ILLUSTRAVOX proves its value in . . .

- **Better employee relations . . .** explains your company, policies, products in attention-compelling way; emphasizes benefits offered to employees.
- **Employee training . . .** workmen learn faster and remember longer.
- **Introducing new products . . .** dramatically, effectively.
- **Safety training . . .** reduces accidents, increases production.

ILLUSTRAVOX, in all fields of training, is the ONE BEST WAY

ILLUSTRAVOX was discovered and field-tested by leading industries before the war. When America was precipitated into the greatest training job of all time it came into extensive use for war training. With its aid, fighters and workers were conditioned in record time. New, scientific methods developed are available for your peacetime needs.

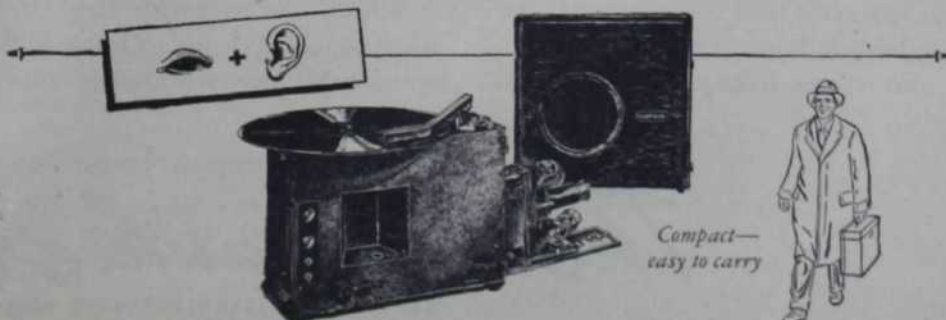
• Illustravox is the scientific training method — a portable, inexpensive sound-slide-film projector. It uses records and slide-film to present your

exact and perfected training message . . . with tremendous appeal. Your story is presented in attention-arresting pictures and spoken words.

• Because it is the ONE BEST WAY to train scientifically, Illustravox shortens the time needed to train workers in special skills, while training them more efficiently. In selling and distribution, Illustravox is an advanced method of training people to do a better selling job. Write today to The Magnavox Company, Illustravox Division, Fort Wayne 4, Indiana.

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THE ILLUSTRATED VOICE





Smart to have around you ALL ELASTIC PARIS GARTERS

Enjoy complete comfort in Paris Garters, tailored of high quality, gentle stretch, long-wearing elastic. See the new Spring styles now at all fine stores 55c and \$1.00. Remember there is no substitute for Paris. When you can get the best, at the price of the next best—we leave it to you, what's best? You can always trust Paris—the trademark that has stood the test of time.

• Enjoy wearing All Elastic Paris Free-Swing Suspenders and Smart Paris Belts. Always higher in quality than price. A. STEIN & COMPANY, Chicago • New York • Los Angeles • Toronto

**PARIS
GARTERS**
NO METAL CAN TOUCH YOU

the jade earring. If the little man over-promised and the goods did not come through, the man on what might have been the receiving end cried that he had been cheated as a matter of national policy."

Congress will urge that a little cohesion be tried out in making future commitments. No law or resolution or anything like that. There is no way of coercing the executive end. But some powerful men on The Hill plan some plain but private talk. The fact is that not even the United States is rich enough and strong enough to do everything that has been promised.

Slight dash of realism

PERHAPS some of the planners for the postwar world are showing too much trajectory for their muzzle velocity. At least there is a rapidly growing doubt in some important quarters.

"When peace comes we must give Germany and Japan a chance to make a living. Most of us would enjoy giving them the ultimate works; cut Germany up into potato patches and forbid the use of machinery to the Japanese. But we cannot starve our beaten enemies; we are not that kind of people; it will be cheaper to fix things so that they can pay their own way than to pick up the check after each meal. That means they must make things to sell to the world. Some of the United Nations would not consent to lose the moderately profitable two-way business they had before the war."

We will, say these realists, do a good deal of threatening, just as after the First War. Lloyd George threatened to hang the Kaiser. But they doubt if the Allies will be too tough. All the world will want to do business.

But they will be hog-tied

IT is as certain as sunrise, however, that neither country will be permitted to have a navy, neither will be allowed to have any marching organizations that

might be turned into armies on short notice, and heavy industries will be banned. It is worth observing that these measures will be cheerfully accepted by elements in both countries. After the First

War a probable majority in Germany, being informed they would have no army and navy to support, thought they foresaw prosperity and peace:

"Less taxes, fewer Junkers, more work for all, peace with our neighbors."

It didn't work out that way.

They do a nice business

LONG before the war one of our great manufacturing concerns sold a piece of machinery to Russia for \$15,000. The Russians were not certain of it:

"Install it and try it," urged the American company. "Scrap it if it doesn't

work. If it does work, pay us in five years. We want your future business and we propose to satisfy you."

The war smashed everything. The city in which the machinery had been installed was reduced to rubble. The Russians could have offered any one of a dozen pleas in abatement. The Americans had written the business off as a loss in war. The day the five years were up the American company got the check for \$15,000, with interest. No comment. This timid writer fears some one of his readers may not like the Russians.



Introducing George B. Galloway

THOSE who want to see him are likely to find him in the Cosmos Club. Slender, blondish, unhurried, 47 years old. At 20 feet he would pass for 25. Quiet, a little on the cynical side, well pressed, no visible politics. Interested in improving the quality of the Government, with a keen appreciation of the value of a taxpayer's dollar, and if his heart bleeds for milkless Malays it bleeds silently.

As chairman of the American Political Science Committee's standing committee on Congress, he has reported eight major changes which would lighten the load on the individual congressman and permit him to devote more time to his real business on The Hill.

So far as discoverable, the congressmen agree. They even applaud. There is a considerable body of congressmen who have been actively working along Galloway's lines. But some of the oldtimers point out that each congressman has ten toes and that each toe is sensitive and that no man can run fast for office if his feet hurt.

Danger: optimism ahead

IN the Pentagon Building the Army is busy playing down the bright hopes about an early end to the war with Japan. We will win, they say, but we should not be fooled by day-to-day successes. The reasoning:

Japan can bring 1,000,000 men to the colors each year out of the current crop of boys; Japanese troops are established on many islands on a practically self-supporting basis; it will take time to dig them out; the opening of the Burma road will help the Chinese; but to freight supplies over a road 1,000 miles long, and with no filling stations en route, cuts the deliveries to a short net; under the best conditions the Chinese troops will not reach full effectiveness for another year; we may be compelled to send a great army into China; the two factions of Chinese are still fighting each other with more vigor than they are fighting the Japs. The Japanese navy is still in being. The Japanese plan may be to hang on in the hope of tiring us out.

The conclusion: two more years hard work.

Three is no crowd...

IN THE DRAWING ROOM *built by Pullman-Standard*



Designed for travel de luxe, this new Drawing Room sets new standards in luxury and personal comfort... in appointments for pleasant relaxation. By day, it is a spacious living room, with broad couch and two easy chairs... two large windows for scenic enjoyment... complete, well-lighted, private wash-room adjoining. At night, with ample dressing room, 3 persons may sleep comfortably in full-sized beds. Full-length mirror... shoe box with aisle outlet... roomy clothes closet and luggage space... individual regulation of lights, heating, ventilation and air conditioning.

Today's critical need for war matériel finds Pullman-Standard making nothing but armament and essential war transportation equipment. No deviation from this fixed course is conceivable until the war is won. To ease the railroads' wartime burden, new cars can be built as war needs dictate. When peace comes, the railroads—as vital to reconstruction as to military supply—will be in urgent need of new equipment.

Recognizing the responsibilities imposed by its leadership in carbuilding, Pullman-Standard will be well prepared to build this new equipment—in types as advanced as tomorrow—to help maintain full employment, and to provide opportunities for returning servicemen. In blueprinting these objectives, we believe we are performing an important service to our national economy.

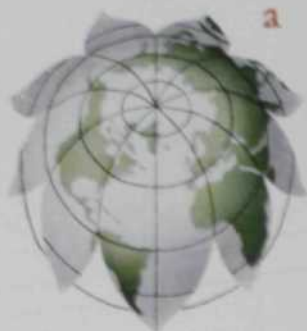
The new Drawing Room, shown above, is typical of many innovations and new designs which will revolutionize former conceptions of travel. As originators of lightweight, streamlined trains and cars, and as headquarters for railway sleeping cars for more than 85 years, Pullman-Standard will hold its leadership in engineering, styling and building the trains of the future.



★
The bond you buy and fail to keep
Is like a sentry gone to sleep;
To match the sacrifice of war,
No man has bought enough; buy more!

★
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World's largest builders of modern streamlined railroad cars

Offices in seven cities
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a Your world, laid out before you. It is laced with 140,000 miles of air routes.

b Combination passenger-cargo airplanes will carry an expected 9-fold increase in air freight.

c Interior of the new passenger version of the Curtiss Commando, typical of the skyliners that will carry 85% of U.S. airline traffic.

d A Curtiss Commando flying "the hump" on the aerial Burma Road.

"Big Time Driver"

WHAT A 10,000-HOUR PILOT CAN TELL YOU
ABOUT THE WORLD OF THE AIR THAT AWAITS YOU



"WE WERE on Christmas Island on Wednesday. On Thursday, we set the wheels down on a New Guinea mud-flat with a load of horses and four-inch guns. The fuzzy-tops had carried in some wounded flyers of ours, across the Owen Stanley Range. We had our wounded at the base hospital in an hour's flying time, and on Friday we took off for the States again, for a steak and a change of shirts."

Sure that's traveling, says this veteran of the ATC. But traveling is his business, and to him the world's just so many whistle stops. As he puts it, "I'm strictly a big-time driver." What does this all mean to you? "Plenty," he says emphatically. "American equipment has been so proved and improved in the brutal laboratory of war that air transport has achieved a reliability almost beyond belief."

He'll tell you, for instance, how reassuring it is to be able to fly over those Owen Stanley Mountains in a twin-engine transport with a big part of the total engine power in reserve. And how those engines can normally travel four times around the world between major overhauls.

The best estimates are that 20 million Americans will travel by air within three years after the war! Yes, travel *and ship* by air, for today business is basing its plans upon planes, and the reason is truly amazing: Against a cost of 88¢ per ton mile for air cargo in 1939, such equipment as the new Curtiss Commando—powered by two 18-cylinder Wright Cyclone engines harnessed to automatic Curtiss Electric propellers—can operate today at a fraction of that cost.

A new world of the air awaits you. It offers the greatest opportunity our people have ever had to insure our national security, to promote trade, and to provide a richer life for all.

FOR TRADE AND FOR SECURITY . . . LOOK TO THE SKY, AMERICA!

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